

A snapshot of the Lesser Kestrel



Re-establishment of the Lesser Kestrel
(*Falco naumanni*) in Portugal



Four years have passed since LPN started the LIFE-Nature Project "Re-establishment of the Lesser Kestrel (*Falco naumanni*) in Portugal (LIFE2002/NAT/P8481). To recover the Portuguese population of this endangered falcon several activities were carried out, including monitoring, scientific research, management of breeding and foraging habitats and public awareness.

The Lesser Kestrel Project is now finished and the results are positive...

LAYMAN'S REPORT

Lesser Kestrel Project (LIFE2002/NAT/P/8481)

"Re-establishment of the Lesser Kestrel (*Falco naumanni*) in Portugal"

Beneficiary: Liga para a Protecção da Natureza (LPN)

Project duration: October de 2002 to September 2006

PROJECT COST

Total cost: 832.379 €

European Union (EU) contribution (75%): 624.284 €

National (LPN) contribution (25%): 208.095 €

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Why a LIFE-Nature Project for the Lesser Kestrel?

The Lesser Kestrel (*Falco naumanni*) is one of the most endangered bird species in the world. Since the 2nd half of 20th Century, the populations of this migratory bird of prey have decreased more than 90% in many European countries.

Portugal is no exception. The Lesser Kestrel was quite common in villages of southern Portugal and the national population was estimated in more than 700 breeding pairs. However, its distribution area started to decline dramatically in 1960 and, by the end of 20th Century, the population had fallen to less than 150 pairs.

How do we explain such a drastic decrease?

The Lesser Kestrel once bred in old buildings and monuments, foraging in the large extensive farming areas surrounding small towns and villages which were made up of cereal crops mixed with pastures and fallow land. Due to the maintenance and resurfacing of old buildings many breeding sites were lost. Also, changes in farming practices (reduction of cereal crops and fallow land, increases in irrigated crops, as well as land abandonment, afforestation and overgrazing) led to a dramatic decrease of Lesser Kestrel foraging areas.

LPN's previous experience

The League for the Protection of Nature (LPN) has implemented, since 1993, several habitat management activities for the conservation of Lesser Kestrel in Castro Verde's Special Protection Area (SPA). This SPA is one of the most important areas for the Portuguese populations of steppe birds, and harbours more than 70% of the Lesser Kestrel population in the country. LPN has also participated in the definition of Castro Verde Zonal Plan, a Common Agriculture Policy Agro-Environmental Scheme which aims to support the best farming practices for promoting the conservation of steppe birds.

Following these efforts, LPN launched a LIFE-Nature Project for the period 2002-2006, with the goal of recovering the Lesser Kestrel population in three SPAs located in the Alentejo region (southern Portugal): Castro Verde, Vale do Guadiana and Campo Maior.

The main goal of the Lesser Kestrel Project is to recover the Portuguese population of this highly threatened species through the protection and expansion of breeding and foraging habitats.



What were the project activities for recovering the Lesser Kestrel population in Portugal?



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LPN worked together with researchers, farmers and landowners to pursue several activities in order to reverse the decline of the Lesser Kestrel population.

The experience obtained from previous projects helped determine the following major objectives and associated actions:

- **To improve and increase the number of breeding sites**, through building repairs in colonies, construction of new breeding sites (breeding walls) and placement of wooden nest-boxes and clay nesting pots;
- **To improve the foraging habitat**, by promoting farming practices that favour the Lesser Kestrel's prey (mainly insects);
- **To monitor the breeding population of the species** at a national level, assessing Lesser Kestrel demographic trends and evaluating the results of the implemented measures;
- **To define Management Plans for the existing colonies**, aiming to ensure their long-term viability;
- **To define Agro-Environmental Schemes for the management of the targeted SPAs**, like the implementation of Zonal Plans that guarantee the conservation of extensive agriculture which is vital for the species survival;
- **To raise awareness of environmental activities** among different target audiences, on the importance of pseudo-steppe habitats and Lesser Kestrel populations.



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< Lesser Kestrel Distribution in Portugal



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During these four years of the LIFE-Project, considerable effort has been made to achieve the recovery of the Lesser Kestrel populations and to assure their long-term viability. The results are promising...

Where should we intervene to recover the population?

Vulnerable Areas for Lesser Kestrel

Castro Verde SPA Vale do Guadiana SPA



To ensure Lesser Kestrel conservation it is important to define priorities by identifying the most vulnerable areas based on species biology and ecology.

Which are the most vulnerable areas that must be protected?

Home range studies served to delineate the main areas used by Lesser Kestrel during the breeding season. Foraging habitats are always located in the vicinities of the colonies. An area of at least 2800 ha around a colony (3 km) needs to be protected, to support its maintenance and survival. However, a buffer zone of 7850 ha (5 km) of suitable habitat is necessary to assure a good breeding success of each colony.

Which types of land use are preferred by the Lesser Kestrel?

Not all types of land use are suitable for Lesser Kestrel foraging. Some do not provide habitat for essential prey species and others have a vegetation density and height that impedes the capture of prey.

The Lesser Kestrel prefers to forage, mainly for insects, in low-intensity farming systems, where the extensive cultivation of cereal crops is practiced in a rotation scheme. This creates a highly suitable mosaic of cereal fields, fallow land and pastures (grazed by cattle and sheep). Forested areas and irrigated crops are not selected for foraging by this migratory bird.

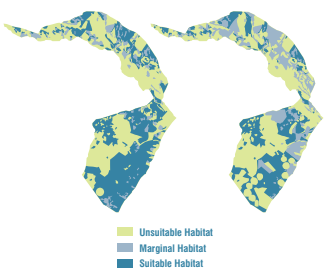
Were there significant changes in land use over the past decade?

Land use maps were used to compare changes between 1991 and 2002 in order to evaluate trends in habitat suitability for the Lesser Kestrel.

Due to the prevailing dominance of the cereal-fallow rotation system that is suitable for Lesser Kestrel, negligible land use shifts occurred in Castro Verde SPA. However, there were significant changes for the other two SPAs. In Vale do Guadiana SPA there was an increase in forested area and scrubland due to land abandonment. In Campo Maior SPA there was an increase of irrigated crops through a process of agriculture intensification.

Habitat Changes in Campo Maior SPA

1991 2002



The land use maps and the identification of the most vulnerable areas for Lesser Kestrel are key tools to define conservation measures for this species in Portugal.

What did the monitoring results show?

Lesser Kestrel population levels were monitored during each of four years from the date these migratory birds arrive in February until the end of July, when autumn migration to Africa begins.

All known colonies were surveyed for breeding success and to identify the most important threats. Each year new chicks were ringed with metallic and coloured rings to track juvenile dispersion and population trend.

Monitoring the breeding population is an essential tool to evaluate the impact of the management activities carried out and to avoid or eliminate the most important threats.

What was the Lesser Kestrel response?

One of the outcomes of LIFE-Project has been a significant increase in the Lesser Kestrel population. Between 2001, when the first national census was made, and 2006, **the population increased 54%**. Today there are around 445 pairs breeding in 55 colonies.

Over the four years of the project, **2797 juveniles** were ringed. Despite this exceptionally high number, data are still statistically insufficient to fully understand dispersion movements. However, preliminary indications suggest that the birds tend to return to their birthplaces to breed.

During rearing, some juveniles fall from the nest to the ground before they're able to fly.

These weak and wounded birds were taken to the LPN

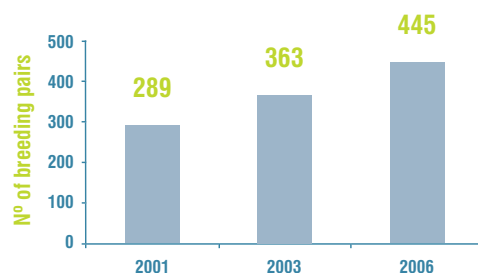
Wild Animal Recovery Centre (CARAS) in Évora.

After recuperating, 107 juveniles were released, representing almost 4% of the ringed juveniles. This effort helped reduce juvenile mortality and increase breeding success.

How do we explain the Lesser Kestrel population increase?

Most of this increase can be explained by the population growth in Castro Verde SPA (ca 60% since 2001). The population increase in this SPA is mainly due to breeding site improvements and maintenance of pseudo-steppe habitats, through the Castro Verde Zonal Plan which has been in place since 1995.

In Vale do Guadiana SPA, the population is fluctuating, although it tends to decrease, due to land use changes that led to the lost of suitable habitat for the species. In Campo Maior SPA the last breeding colony disappeared. Nowadays the region is only used as a foraging habitat for the Lesser Kestrel populations that breed in Spain, near the border.



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How were the breeding habitats improved and what was the impact?

Lack of breeding sites may hamper Lesser Kestrel recovery in Portugal. Moreover, building deterioration associated with some colonies has been rapid, resulting in the lost of breeding sites and even entire colonies over very short periods of time.

What techniques were used to enhance breeding habitats?

For six Lesser Kestrel colonies, **walls in existing structures were repaired, new holes were opened** and **nest boxes and clay pots were made available**. An additional **21 colonies** required only the provision of nest boxes and/or clay pots.

New breeding structures, termed breeding walls, were built in specified areas where suitable foraging habitat was available. **In total seven breeding walls, with 424 new nests were built** in Castro Verde and Vale do Guadiana SPAs.

Over the four years of the LIFE-Project, 817 new breeding sites were made available, involving 615 nesting cavities in walls, 120 nest-boxes and 82 clay pots.

Improvement of breeding habitat was only possible through partnerships between LPN and owners of houses and other structures in the region (Agreement Memorandums). This is due to the fact that landowner houses were also used as homes by the Lesser Kestrel. This work was also very important to raise landowner awareness of the conservation needs of this species.

Did the Lesser Kestrels occupy these new places?

Occupation rate of the new breeding sites increased since 2003 and **reached more than 37% in 2005**. This rate varied between years due the availability of the new structures and the time needed for the Lesser Kestrels to recognize the new breeding sites and colonize them. About **30% of Kestrels bred in these new structures, which suggests that the increase of the Lesser Kestrel population is related with the availability of new breeding sites.**



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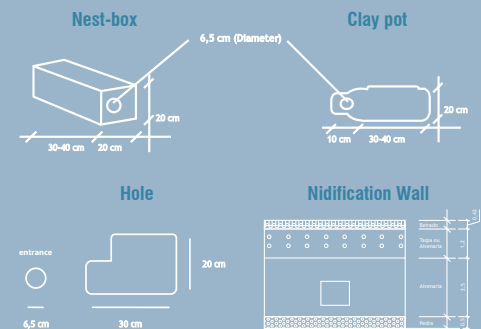
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How and where to put the nests?

- ✈ in the walls less exposed to sun;
- ✈ in flat vertical walls;
- ✈ at 3 m height 0.5 m from the top;
- ✈ at least 1 m from the closest nest;
- ✈ the entrance hole width must be less than 6.5 cm in diameter.



How do we manage the Lesser Kestrel foraging areas?



Habitat management measures that favour Lesser Kestrel foraging areas must:

- ensure the **presence of farming areas with winter cereal crops in rotation with fallow fields and pasture land**;
- guarantee a **high proportion of fallow fields** - greater than 60% of the farm at any given time;
- maintain an area of cereals (wheat, oat or barley) of at least 20% of the farm;
- **ensure the presence of livestock**, but managing it in order to avoid overgrazing;
- **avoid ploughing or sowing near riparian or wetland areas** (from 2 to 5 m), preserving the natural vegetation;
- **restrict the afforestation of farming areas**;
- restrict the plantation of permanent crops, like olive groves.

From theory to practice: how did the LIFE-Project promote the appropriate management of foraging habitats?

Agreements with farmers were signed in order to increase the foraging areas near the Lesser Kestrel colonies. To reverse land abandonment in Vale do Guadiana SPA, **199 ha of cereal crops** were sown in areas around the colonies between 2003 and 2006.

In the 5 LPN's properties, which occupy around 1700 ha of Castro Verde SPA, land management also promotes the conservation of Lesser Kestrel foraging habitats.

How do we ensure the long-term conservation of the Lesser Kestrel vulnerable areas?

Through the inclusion of farming management measures in Agro-Environmental Schemes, like the Castro Verde Zonal Plan. These schemes should be implemented in the Lesser Kestrel distribution area, particularly in the 7850 ha surrounding breeding colonies. In addition to ensuring that the Castro Verde Zonal Plan is maintained with competitive supports, it is very important to implement similar schemes in comparable habitat in Vale do Guadiana and Campo Maior SPAs. If these measures are included in the Portuguese Rural Development Programme (2007-2013), it will be possible to assure the long-term conservation and protection of the Lesser Kestrel foraging habitats in the region.

How do we ensure the viability of Lesser Kestrel colonies?

Management Plans were defined for the Lesser Kestrel colonies with more than five breeding pairs. These Plans were established based on breeding population trends and factors influencing the survival and growth of each colony.

How many Management Plans were defined?

Management Plans were defined for **18 colonies** in Castro Verde and Vale do Guadiana SPAs. These included:

- number of breeding pairs and breeding success;
- name and contacts of home owners and their plans for the future of their buildings;
- land use of the areas surrounding the colonies and its suitability as foraging habitat;
- identification of breeding success constraints (predation rate, inter-specific competition, human disturbance);
- analysis of land use is addressed in national and regional land management instruments.

The Management Plans recommend concrete measures to implement during and after the LIFE-Project, in order to assure the long-term conservation of the colonies.



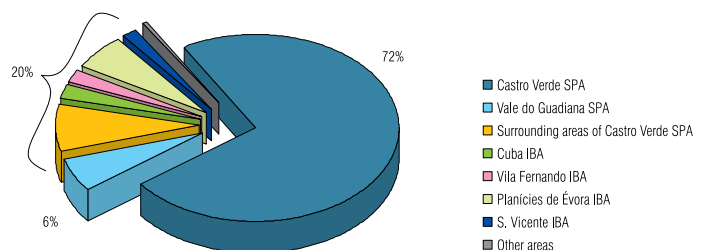
How do we reduce threats to the colonies?

When the number of breeding sites is too low, new nesting cavities can be opened in structure walls. Nest-boxes or clay pots are one solution where there are existing structures. Construction of new breeding walls is an option in areas with suitable foraging habitat where there are no suitable buildings present. The location of new breeding sites must minimize the impacts of predation and inter-specific competition. To reduce human disturbance and nest plundering, monitoring and vigilance must be enforced.

Are the existing SPAs enough to ensure Lesser Kestrel conservation?

The Castro Verde SPA holds more than 70% of Portugal's Lesser Kestrel population, which makes it very vulnerable to random phenomena that can cause irreversible damages on the population. Therefore, it's crucial to ensure the presence of several areas with suitable habitat for the conservation of this species. At least 20% of the Lesser Kestrel national population occurs in non-protected areas, though they're considered as Important Bird Areas (IBA). The classification of Cuba, Planícies de Évora, Vila Fernando e S. Vicente IBAs as Special Protection Areas (SPA) will be of extreme importance to preserve Lesser Kestrel in the long term.

Lesser Kestrel Distribution by SPAs e IBAs >



How was the public involved in the efforts to recover Lesser Kestrel populations?



Activities carried out involved target audiences from all ages, and several audiovisual materials were produced to enhance local knowledge about the species and to encourage the public to participate in the conservation efforts.

In 2004 LPN organized the **International Congress on “Rural Ecosystems and Biological Richness: Main Threats and Conservation Measures”** and the **“International Workshop on the Conservation of Lesser Kestrel”**, to promote the exchange of experiences and conservation measures of the species and its habitat.



During 2004 and 2005, three **Training Workshops** on the **“Conservation of Steppe Birds and Recovering Endangered Species”** were organized. These activities were targeted to teachers and several educational materials were produced. **Environmental education projects** were also conducted during school hours with students from Castro Verde SPA.

An **Ecotourism Project** for Castro Verde and Vale do Guadiana SPAs was drawn up to promote sustainable ecotourism that minimizes human disturbance in the Lesser Kestrel colonies. A **birdwatching trail for the Lesser Kestrel** and other steppe birds was also delineated in Castro Verde SPA.



Visits to the Lesser Kestrel occurrence areas were very important to raise awareness. That's how the Lesser Kestrel Welcome Day and the Lesser Kestrel Day were born.



LIFE-Project audiovisual materials

- Lesser Kestrel Project flyer;
- “Old Friends” flyer – pseudo-steppic ecosystem and associated bird species;
- “Small Gestures for Everyone” flyer – good practices for farming and nest building;
- “Falco e Otis” children book;
- “Na Grande Rota do Peneireiro-das-torres” book;
- Educational Kit – student’s notebook, exercise sheets and teacher’s notebook;
- Press kit with CD;
- Video and exhibition panels;
- Posters, stickers, folders and pens;
- Press releases and technical and non-technical articles;
- Website.





And in the future... how do we keep ensuring Lesser Kestrel conservation?

Over the four years of the LIFE-Project activities were developed aiming to ensure the long-term conservation of the Lesser Kestrel, well beyond the life of the project. Species recovery in Portugal must now go on with more limited external intervention.

However, some activities must still be carried out, such as monitoring colonies to assess buildings conditions and, if necessary, restoring walls and roofs, reopening new nesting cavities and replacing damaged nest-boxes and clay pots. Providing a legal protection status for the buildings that are home to Lesser Kestrel colonies will certainly contribute to ensuring breeding habitat conservation.

Foraging habitat conservation will only be possible through the maintenance of extensive farming systems that create a landscape mosaic of cereal crops, fallow land and pastures. For that purpose farmers of these regions must be supported by Agro-Environmental Schemes, like the Castro Verde Zonal Plan, that actively promote the conservation of steppe bird habitat.

During these four years, it was possible to contribute to the recovery of 450 Lesser Kestrel pairs, but we are still far from the 700 pairs that once bred in Portugal. The re-colonization of old breeding sites is still needed as well as efforts to ensure the survival and growth of the smaller populations of this species.

For now, this Project is over, but Lesser Kestrel conservation continues... and that responsibility belongs to US ALL!

