

RAPTORS CONSERVATION IN SICILY

LIFE 14 NAT/IT/001017

Measures for the conservation of Bonelli's eagle,
Egyptian vulture and Lanner falcon in Sicily



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**Duration:**

5 yaers (01/09/2016 – 30/10/2021)

Budget:

2,877,095 Euro

LIFE program contribution:

2,071,508 Euro

Name of the coordinating beneficiary partner:

WWF Italy - ONG - Onlus

Name of the associated beneficiary partner:

REGION OF SICILY - Department of the Territory and the Environment – Regional Department of the Environment (DRA)

Name of the associated beneficiary partner:

REGION OF SICILY - Regional Department of Rural and Territorial Development (DRSRT)

Name of the associated beneficiary partner:

Grupo de Rehabilitación de la Fauna Autóctona y su Hábitat (GREFA)

Project area

Region of sicily





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THE PROJECT

The project Raptor conservation in Sicily (**LIFE14 NAT / IT / 001017 - ConRaSi**) developed from the need to improve the conservation status of three species of birds threatened with local extinction. The project concerns Bonelli's eagle (*Aquila fasciata*), the Egyptian vulture (*Neophron percnopterus*) and the lanner falcon (*Falco biarmicus*) and aims to improve their breeding success through new conservation measures while strengthening conservation measures already in place. The main purpose is to reduce the burden of some of the most significant threats – in particular, the illegal removal of eggs and young from the nest – which has brought the species to the brink of disappearance from the island.

To address these threats, identification and surveillance activities have been implemented at nesting sites during the breeding phase. Other activities include censuses of reproductive populations, annual campaigns for the tagging of young specimens with colored rings and satellite transmitters and the activation of supplementary feeding stations. Other necessary, but unforeseen, activities (such as the treatment of infections and the administration of drugs to juvenile Bonelli's eagles for the prevention of trichomoniasis) allowed us to achieve positive results, particularly concerning the conservation of **Bonelli's eagle and the Egyptian vulture**.

The project, with an initially planned duration of 3 years and an extension until autumn 2021, has had to face the consequences of the Sars Covid-19 pandemic, which has particularly affected Sicily. Some project activities had to be adapted to national and regional restrictions, and were so severely affected that a further extension of the project deadline is required. The most critical issues concern activities for the broad dissemination of information and the crucial involvement of local communities. These activities were compromised during the months when movement between Italian regions and within the Region of Sicily itself was impossible, preventing a continuous active presence in the most important areas and a significant reduction in the number of meetings which could take place with schools and stakeholders. Interactive online communication channels – the website and social media network – at least partially compensated for the absence of in-person activities, allowing the circulation of information and updates on the actions and themes of the project.

The main objective of the period which will now follow the conclusion of the **LIFE ConRaSi** project, in addition to a greater physical presence, is certainly that of continuing the activities which have registered positive impacts for the conservation of the three species. These are defined in detail in the National Action Plan for Bonelli's eagle, recently adopted by the Region of Sicily as a result of the project.



LIFE PROGRAM

The **LIFE program** is a financial instrument of the European Union to support environmental projects, nature protection and climate actions throughout the EU. In the last 30 years, LIFE has co-financed nearly **5,000 projects**, contributing approximately **6.5 billion euros** to the protection of the environment and climate. Specifically, for the 2014-2020 period, the goal is to contribute to sustainable development and the achievement of the objectives of the Europe 2020 strategy, divided into two sub-programs "Environment" and "Climate Action".

The **LIFE ConRaSi** project is part of the "Environment" sub-program within the "Nature and Biodiversity" priority action area.

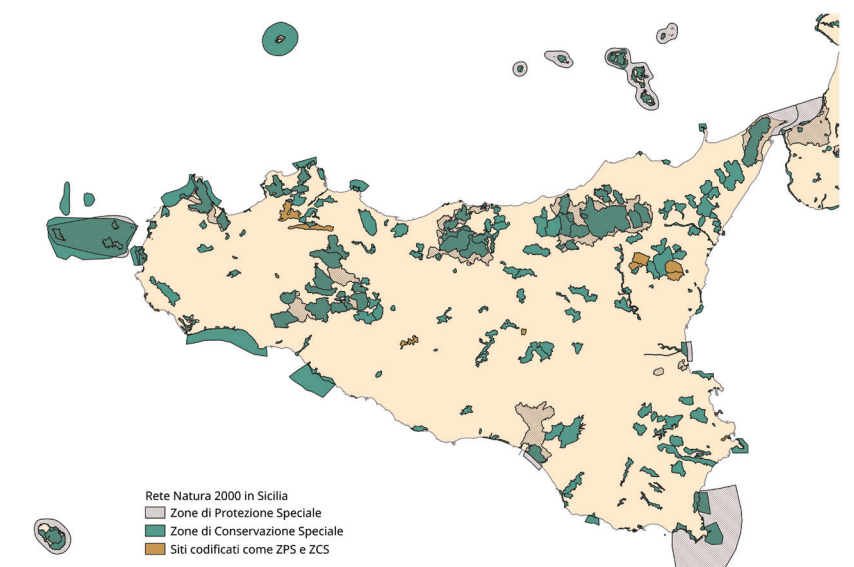
NATURA 2000 NETWORK IN SICILY



Natura 2000 is the main instrument of the European Union's policy for the conservation of biodiversity. It is a European ecological network of protected

areas established in accordance with the "Habitat" Directive 92/43 / EEC to ensure the protection of natural habitats and species of flora and fauna identified as priorities by individual Member States. Species of community interest are rare or endemic species or those threatened with extinction; habitats of community interest are characterized by a reduced spatial distribution, and by their unique qualities. The Natura 2000 network is made up of Sites of Community Interest (SCI), established by the Member States as required by the Habitats Directive, subsequently designated as Special Areas of Conservation (SAC), and also includes Special Protection Areas (SPAs) established under the "Birds" Directive 79/409 / EEC for the conservation of avifauna.

There are 239 sites in the Natura 2000 network in Sicily, including SCIs and SPAs.



BIRDS OF PREY IN SICILY

Bonelli's eagle (*Aquila fasciata*), the Egyptian vulture (*Neophron percnopterus*) and the lanner falcon (*Falco biarmicus*) are three species of raptor included in Annex I of the Birds Directive. At a national level, Bonelli's eagle and the lanner falcon are considered endangered (EN) and the Egyptian vulture is highly endangered (CR) according to the Red List of breeding birds in Italy.

Sicily is essential for the survival of these three species, as it hosts 100% of the Bonelli's eagle nesting population in Italy, 65% of the national Egyptian vulture population and 70-80% of the Italian lanner falcon population. All three species face serious conservation problems throughout Sicily and, due to threats directly or indirectly related to human activities on the island, they are increasingly rare and possibly at risk of extinction in the short term.

The most consistent threats include first direct persecution such as culling, taking of eggs and nestlings and poisoning, and second the reduction of trophic resources, the increasingly significant loss of habitat due to the transformation of the Sicilian landscape, the intensification of agricultural activities and the birds' vulnerability to electrocution on powerlines.



PROJECT OBJECTIVE

The general objective of the project is to ensure the long-term conservation in Sicily of Bonelli's eagle, the lanner falcon and the Egyptian vulture, through population increase and more specifically an increase in the reproductive pairs present. More specific objectives have been achieved through concrete actions that worked to mitigate the main threats to the survival of these species.



VIDEO CONTROL AND SURVEILLANCE

THREAT

Illegal collection of eggs and nestlings from the nest.

OBJECTIVE

Drastically reduce illegal activities and poaching. The illegal practice of taking eggs and nestlings from the nest is addressed with the organization of surveillance camps, previously established by the Raptors Protection Group (GTR), and the video surveillance of nests through the use of simultaneously active webcams and 40 camera trapping devices. The more than 55,000 images obtained in 2021 alone have allowed a constant monitoring of nesting sites and have activated, in several cases, recovery interventions and a variety of operations by the project team. In addition, video control systems which capture poaching activity trigger the prompt intervention of the forest police who, thanks to a network of direct communication with the project managers, have constantly worked with us towards the achievement of project objectives.

RESULTS

- Significant reduction in the illegal collection of nestlings and eggs from the nest
- 6 surveillance camps organized between 2016 and 2019
- 43 volunteers involved in surveillance activities
- 10 new-born birds supervised until fledging
- 4 significant interventions following the images captured by camera traps
- The project team and the forest police responded to a variety of complaints and requests for intervention
- 5 Reproductive Seasons Surveyed
- 42 sites monitored during the project
- 50 Camera Traps Used
- More than 130,000 images taken by camera traps during the project.



ADDITIONAL TROPHIC STATIONS

THREAT

Lack of food resources due to the reduction of suitable prey and the reduction of pastures in the wild.

OBJECTIVE

Increase the survival and reproductive success of the population by increasing the trophic capacity of the territory. To make up for the scarcity of trophic resources in the area, supplementary food stations were installed: artificial rabbit warrens to provide key prey for Bonelli's eagle and the creation of a system of feeding stations in areas occupied by Egyptian vultures to increase the recruitment of individuals and favor the formation of new reproductive couples. The feeding stations were also monitored using video control systems to track the degree of use by the project species. Providing the species with sufficient trophic resources is also a means of minimizing the risk of the birds ingesting poisoned food during their search for prey and of reducing their predation of columbiformes, vectors of *Trichomonas* spp., a disease which is debilitating and often deadly for Bonelli's eagle.

RESULTS

- Installation of 6 supplementary feeding stations
- Installation of 5 artificial rabbit warrens
- Between 15 and 20 kg of biomass supplied weekly
- 1 company under contract for the supply activity
- 5 video-monitored feeding stations in 2021.

MONITORING THE POPULATION OF BONELLI'S EAGLE

THREAT

Lack of reliable data on demography and distribution of the three species in question.

OBJECTIVE

Obtain detailed information on the demographic parameters of the species and their spatial distribution for the development of appropriate conservation measures. The need to obtain exhaustive data on the populations present in Sicily has led to extensive monitoring of the Egyptian vulture, Bonelli's eagle and the lanner falcon. Bonelli's eagle has been monitored most consistently: up to 10 young specimens have been ringed or equipped each year with GPS / GSM transmitters, powered by a small solar panel. The transmitters collect the position data of the individuals and send it to the Movebank platform, allowing us to acquire a significant amount of information on the various life stages of these individuals, such as the duration of dependence on parents, the beginning of dispersion and habitat preference. The localization of individuals using GPS transmitter has also proved to be fundamental both for investigating the causes of mortality of the species, and for the recovery of individuals in difficulty: the device signals any inactivity of the birds which has, in fact, allowed prompt intervention in some cases, saving the subjects in question.

RESULTS

- Up to 10 young eagles fitted with GPS transmitters every year
- 43 specimens tagged since the start of the project
- 39 young eagles with GPS to date in the wild
- 5 annual tagging campaigns supported by the Spanish rock climbers of partner organization GREFA
- 2 individuals who were equipped with GPS transmitters were rescued from water collection tanks thanks to the project team.





GENETIC MAPPING OF THE BONELLI'S EAGLE POPULATION

THREAT

Lack of information on Bonelli's eagle population genetics and lack of management and conservation tools for the species.

OBJECTIVE

Increase knowledge of the genetics of the population and adopt a National and Regional Action Plan for the conservation of this raptor. During the tagging campaigns which took place as part of the project, activities were organized to take genetic samples from Bonelli's eagle individuals. The samples were analysed and stored to contribute to the creation of a database for the species at the genetic laboratory of ISPRA (Higher Institute for Environmental Protection and Research). In addition, data was collected for the preparation of a National Action Plan for the species to be adopted by the Region of Sicily.

RESULTS

- Samples were taken from about 40 specimens of Bonelli's eagle and the genetic mapping prepared.



EDUCATION AND ACTIVITIES TO RAISE AWARENESS ON THE CONSERVATION OF THE THREE SPECIES

THREAT

Lack of knowledge on the part of local communities and stakeholders of the target species and of the conservation problems related to them.

OBJECTIVE

Raise awareness of the need to conserve raptors in Sicily. During the project period, public meetings were organized and held with local communities, with stakeholders and schools in the area, with activities for the dissemination of information material. These activities were only able to be carried out up to and including February 2020, since in the subsequent period activities had to be cancelled due to restrictions enforced by the Covid-19 pandemic. In the same period (up to and including February 2020), conferences and research activities supported by the University of Palermo were also organized.

RESULTS

- Organization of meetings with stakeholders
- 6 meetings with schools



COMMUNICATION: NUMBERS

ONLINE ACTIVITIES

- a project website
- a project facebook page
- a project instagram account
- a project Twitter profile
- about 20 news items published in English on the website and 100 news items published in Italian
- a YouTube channel dedicated to the project activities

MEDIA

- Numerous local and national press releases

VISUAL COMMUNICATION

- Numerous brochures printed and used in meetings with schools and stakeholders
- 15 videos on the dedicated YouTube channel with about 15,000 views

NETWORKING

- Numerous networking opportunities
- Two university theses carried out within the project
- Networking with other LIFE projects, in particular with the A-LIFE eagle project for the conservation of Bonelli's eagle in the Mediterranean
- Three Bonelli's eagles selected for relocation to Sardinia as part of the same project.





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FINAL RESULTS

Thanks to the project activities, the general objective of the project has been achieved: the populations of Bonelli's eagle and the Egyptian vulture have increased significantly in Sicily. The lanner falcon population is stable and the actions foreseen by the project for this species will continue to be implemented in the period following the conclusion of the LIFE ConRaSi project.

BONELLI'S EAGLE

An analysis of trends in the bird's main reproductive parameters reveals that all the parameters considered have increased, evidence of the positive outcome of conservation actions developed during the LIFE ConRaSi project. The only exception is the fledging rate, the slight reduction in which could be due to the scarcity of wild rabbit and therefore its relative shortage in the raptor's diet. Furthermore, from the data provided by monitoring, it is evident that the species increasingly occupies the most suitable areas of the island. In fact, newly occupied territories or reoccupation of historical sites were discovered in each project season, with couples almost always made up of young adults or sub-adults, an unequivocal sign of the numerical and territorial expansion of the population.



EGYPTIAN VULTURE

In recent decades, the population has fluctuated, but still tended to decrease. Recently, however, the population demonstrates a certain stability, with slightly positive trends regarding reproductive success and productivity rate (the ratio between fledglings and the number of territorial pairs monitored). This is an important factor as it opens the way for the implementation of effective conservation activities. We have seen the positive effect of supplementary feeding stations on the fledging rate, and these results encourage the possibility of conservation actions that could be really effective in maintaining this population over time, together with activities aimed at reducing general mortality.

THE LANNER FALCON

Considering the 2016-2021 period, the productivity rate of this species was much lower than that recorded in other studies in Sicily relating to previous periods, while the fledging rate is consistent with that reported in the literature. However, the most alarming parameter is that of reproductive success, which is much lower than that reported in the literature. In the 2020 season, characterized by restrictions on human activities due to Covid-19, a significant increase in productivity rate and reproductive success was indicated, then quickly reversed, linked to the varying levels of anthropogenic disturbance in the territories occupied in the reproductive period during the 2020 season. The data collected and analysed during the project shows that the current situation of the lanner falcon in Sicily, as in the rest of Italy, is dramatic. It demonstrates a reduction both in the number of couples and in reproductive parameters, and highlights the necessity for site surveillance – to prevent the poaching of nestlings and eggs – and actions to further reduce anthropogenic disturbance continuing beyond the end of the project. More research is also essential to ascertain any other factors – including climate change and epidemiological factors – responsible for the collapse of this species.





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LAYMAN'S REPORT

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