

LIFE GYPCONNECT

**Restoration of connections
between the Alpine and
Pyrenean populations
of Bearded Vulture**
(Gypaetus barbatus)

LIFE GYPCONNECT (LIFE14 NAT/FR/000050)



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LIFE GYPCONNECT

Area covered by the project

The target area covers **3 geographical regions** (Occitanie, Auvergne Rhône-Alpes, Provence-Alpes-Côtes d'Azur), **11 departments** and **456 municipalities**, and includes nearly **5,500 km² of Special Protection Areas** (SPAs, in application of European Directive 79/409/EEC)

Initial total budget

€5,631,742, including 75% of the eligible costs covered by the European Commission's Life Nature financial instrument

Duration

6 years (2015 - 2021) - extension until July 31, 2022



Coordinator

Ligue pour la Protection des Oiseaux (LPO France)

Operators

Vulture Conservation Foundation (VCF), Ligue pour la Protection des Oiseaux Occitanie (LPO Occitanie), Parc national des Cévennes (PNC), Vautour en Baronnies (VEB), Parc naturel régional du Vercors (PNR Vercors), Sorbonne Université (SU), Centre national d'Informations toxicologiques vétérinaires (CNITV), ENEDIS

Contact

LPO France
Pascal Orabi
pascal.orabi@lpo.fr
www.gypconnect.fr



The Bearded Vulture - a unique and symbolic species...

The Bearded Vulture is one of the largest birds of prey in Europe and its behaviour is exclusively necrophagous. It feeds mainly on bone remains which it takes from the corpses of domestic or wild ungulates (sheep, goats, chamois, ibex). Like the other three vultures found in France, it performs a natural «rendering» service. Consequently, it is a natural waste manager and an essential link in agro-pastoral ecosystems.

Vultures evolve in steep relief with open spaces where it will find ungulates on which to feed, rocky areas to shelter a large nest and scree slopes where it can break bones. With a life span of approximately 30 years, the Bearded Vulture is a species that breeds late (usually not before the age of 7) and has low productivity. The population dynamics therefore depend on the longevity and experience of the adult birds.

... But vulnerable

The subspecies that reside in France (*Gypaetus barbatus barbatus*) occupies the mountainous regions of central and southern Europe, North Africa, the Middle East and Asia Minor to China.

During the XXth century, this symbolic species disappeared from most of the mountain ranges in the Mediterranean basin. Populations are now gradually returning, thanks to the reintroduction programmes undertaken, but the balance remains fragile. Despite the efforts made, the Bearded Vulture is classified as «vulnerable» in Europe and is considered «endangered» in France (about 70 pairs).

Like all birds of prey, the Bearded Vulture is protected and is one of the priority species covered by the Birds Directive. One of the main threats currently facing the species in Europe is the fragmentation and isolation of populations, in addition to electrocution and impact with power lines, shooting, intentional or accidental poisoning, and disturbance in and around its breeding grounds, etc.

Did you know?

Its unique feeding behaviour has earned it the nickname of «bone breaker».





A European Project: LIFE GYPCONNECT

This programme is part of a dynamic international approach and is consistent with the various European programmes, implemented since 1974, which aim to safeguard the Bearded Vulture and to reclaim the territories where it has disappeared. In France, it meets the objectives of the 2010-2020 National Action Plan for the species.

«The Life programmes are financial instruments generated by the European Commission to implement its natural heritage safeguarding policy.»

What are the project objectives?

The LIFE GYPCONNECT programme had two main objectives:

- To strengthen the Bearded Vulture population by creating new population nuclei in the Drôme and the Massif Central
- To promote the movement of birds from these population nuclei between the Alps and the Pyrenees



THE STEPS TAKEN AND THE OUTCOME OBTAINED

An action programme has been defined to allow the reintroduction of the Bearded Vulture population and the re-establishment of exchanges between the various population nuclei extending from the Alps to the Pyrenees.

More broadly, the aim is to re-establish continuity between the western and central European populations of the species. This would restore a genuine European metapopulation of the species capable of surviving and reproducing independently of human intervention.

The LIFE GYPCONNECT project was based primarily on:

✓ reintroduction operations in the French Pre-Alps and Massif Central regions

✓ suppression of threats to Bearded Vultures in the LIFE area

✓ better access to food resources



LACK OF CONTINUITY BETWEEN THE POPULATIONS



Action

Creation of new population nuclei through reintroduction

Reintroduction is the main focus of LIFE GYPCONNECT and the last resort to help a threatened species and save it from extinction.

The reintroduction operations for this project are being implemented in an attempt to establish new population nuclei to reconnect the populations of the Western Alps and the Eastern Pyrenees and to safeguard the gene flow necessary for their viability.

Release sites were selected for the various regions concerned. The birds were released using the «hacking» technique, which consists of depositing the birds in a prepared rock cavity until they can fly naturally. The

Key outcomes

- **1 additional release site** located in the Drôme region with a total of
- **4 release sites** overall in the project area
- **46 birds released** in the Pre-Alps and Massif Central over the project period (2015 - 2022)
- **5 to 6 pairs** in the LIFE intervention area
- **Numerous exchanges** of birds between the various mountain ranges consolidate the flow between the Alps and the Pyrenees

released birds were fitted with a GPS tag to facilitate post-flight monitoring. Marking was carried out by fitting metal rings with an alphanumeric code and by bleaching the feathers with a specific code for each individual bird. This allows them to be identified in flight.

The Vulture Conservation Foundation (VCF) coordinates the Endangered European Species Program (EEP) for the Bearded Vulture and provides the birds for the various European reintroduction programmes. More than 40 different organisations supply the vultures for reintroduction. The birds are then able to evolve and breed in the wild on reaching sexual maturity.

A new release site in the Drôme

At the end of 2015, the Vautours en Baronnies Association started work on the new release site as advised by the VCF in preparation for the first Bearded Vulture release operation in the Provençal Baronnies region scheduled for spring 2016.

The reintroduction of the Bearded Vulture in the Baronnies mountain range was an important step in reconnecting the populations of the Alps and the Pyrenees via the Massif Central. The release of Bearded Vultures also strengthens the guild of scavengers in this area,

which is now home to the four species of European vultures: Griffon Vulture, Cinereous Vulture, Egyptian Vulture and Bearded Vulture.

Thus, 14 Bearded Vultures have been released in the Baronnies since 2016 as part of the LIFE GYPCONNECT project. Pre- and post-flight bird monitoring was carried out by teams of monitors comprising employees, volunteers and trainees, who took turns on a daily basis to ensure that a seamless release operation was carried out.

ACCESSIBILITY TO FOOD RESOURCES



Action

Improve and secure the trophic resource

In order to make the region more attractive and to encourage the settlement of Bearded Vultures, concrete action to improve the availability and accessibility of trophic resources was planned by creating and managing a network of natural rendering sites in the GYPCONNECT LIFE intervention zones. The European regulation on natural rendering allows several types of facilities to be installed: feeding places; specific feeding sites for Bearded Vultures; natural rendering outside a station (although the latter has still not been authorised in France). The use of feeding sites also controls and secures the food resource in order to promote the survival of the young birds released. This practice also helps to strengthen or reforge the ancestral link between pastoralism and natural rendering carried out by the vultures.

«Given the type of deposits, the feeding sites promote the entire guild of necrophagous birds of prey.»

Key outcomes

- Creation of **29 additional feeding places**
- Creation of **8 specific feeding sites** for Bearded Vultures
- **1 technical guide:** «Bearded Vulture and natural rendering»

A network of natural rendering feeding sites in the Aude region

Natural rendering was introduced in the Aude region in 2000 with the creation of the first collective feeding sites for Egyptian Vultures. Thanks to the resources provided by the various programmes, a network of feeding stations has subsequently been developed to benefit the entire vulture guild. These installations are managed in conjunction with relevant breeders who provide and maintain the sites

while the LPO Aude handles the administrative aspects. This network of feeding sites has been created alongside a campaign to promote awareness and provide information to the agricultural world and the general public. By the end of the project, this network comprised 10 additional feeding sites created as part of the LIFE project covering a total of 27 additional farms in the Aude department.



SECURING RELEASE SITES BY REMOVING THREATS

The mortality of necrophagous birds of prey in the LIFE region was monitored to identify and reduce threats in order to guarantee a secure living environment for the reintroduced birds conducive to the development of Bearded Vulture populations. In collaboration with the CNITV (Centre National d'Informations Toxicologiques Vétérinaires - French National Centre for Veterinary Toxicological Information) in charge of toxicological monitoring within the LIFE GYPCONNECT programme, 203 corpses were collected, autopsied and analysed, including

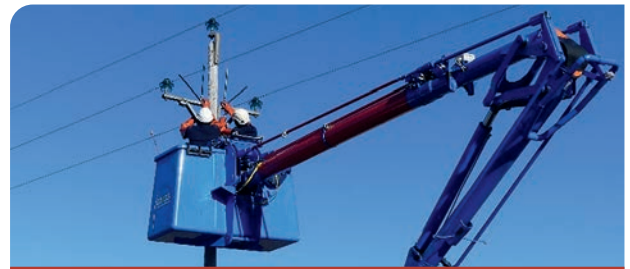
15 Bearded Vultures, 150 Griffon Vultures and 20 Cinereous Vultures. The assessment at the end of the LIFE programme confirms that the main threats identified unfortunately still prevail: electrocution, trauma, lead intoxication and illegal shooting.

In order to increase the solitude and safety of the reintroduction sites and of the entire LIFE territory in general, actions have been implemented by the LIFE teams to prevent disturbances and eliminate the risks of mortality.

Action

Securing the electrical network

The programme included actions to reduce the risk of electrocution and impact with power lines, which are major threats to large birds of prey and the Bearded Vulture in particular. The number of mortalities linked to electrical installations, especially among juvenile and inexperienced individuals reintroduced as part of the LIFE GYPCONNECT project, has confirmed the need to secure dangerous power lines in the LIFE territory, and particularly in the release areas. Following preparatory work to list and prioritise the power lines posing an immediate threat to vultures, hazardous lines were made safe and neutralised in conjunction with ENEDIS: burying of lines, securing of lines and poles, installation of visualization spirals or beacons, etc.



Key outcomes

- **Neutralisation** of almost **7 km** of dangerous **power lines**
- **Installation** of anti-percussion and anti-electrocution devices over **12 km** of **electric lines**

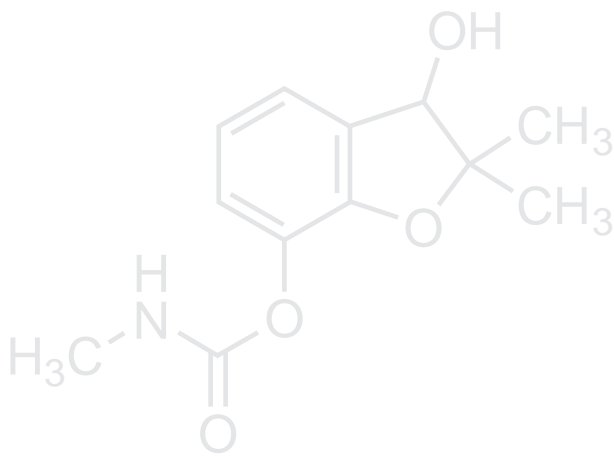
Avifauna protection against power lines in the Grands Causses

Priority work sites were identified after listing and prioritising those power lines deemed to be dangerous. The first project in Lozère was an opportunity for the LPO and ENEDIS to test a new bird protection instrument, namely the firefly beacon, used to mark cables. This innovative installation technique allows ENEDIS technicians to execute the operation without

turning off the electricity supply in the area. Other bird protection works were subsequently carried out as part of the GYPCONNECT LIFE project. These involved the installation of firefly beacons and sphere on power lines and the positioning of devices on poles to discourage birds from landing on them and getting electrocuted.

Key outcomes

• **4 wind farms project under instruction have been rejected** by administrative court decision, by prefectural decree, by unfavourable opinion of the Ministry of the Environment.



Action

Combating the toxic threat

Necrophagous birds of prey are particularly vulnerable to poisoning. Poisoning is still one of the major threats to vultures. Vultures can be poisoned by directly consuming lead fragments from hunting corpses or by eating animals that have died from poisoning or exposed to a toxic substance. Whether accidental or criminal, poisoning is an important issue likely to impact the success of the reintroduction project, as evidenced with the young Durzon Bearded Vulture, released in 2017 in the Grands Causses, which fell victim to carbamate poisoning in 2018, forcing the team to cancel the release in that region for the rest of that year.

Specific action was therefore required to combat and monitor the toxic threat. Carbofuran is one of the incriminating compounds. This is a carbamate insecticide that has been banned in France since 2008. Lead is also responsible for many cases of intoxication. The effects of anticoagulants used as pesticides or biocides to control small rodent populations and veterinary euthanasia products are monitored.

Action

Integration of the «Bearded Vulture» issue in the development of wind energy

The increase in wind turbines, both on the Bearded Vulture's travel corridors and within its home environment, poses a real population conservation issue. The progress of wind farm projects has been monitored alongside campaigns to raise awareness of the challenges faced by large birds of prey in consultations with wind developers, State services and the local authorities in order to better integrate the conservation challenges faced by large birds of prey and the risks posed to the Bearded Vulture by wind farm development projects. Although no reports of Bearded Vultures colliding with the blades of a wind turbine have been documented in France, the death of Angèle, released in 2020 in the Baronnies, after colliding with a wind turbine in 2021 in the Netherlands, has confirmed the importance of incorporating this «Bearded Vulture» issue into wind turbine development.

Based on the telemetric monitoring data of 83 Griffon Vultures, 58 Bearded Vultures, 36 Cinereous Vultures and 5 Egyptian Vultures, the work of prioritizing the stakes in the LIFE region, carried out in collaboration with the CNRS (French National Centre for Scientific Research) has identified the specific risk of interaction with wind turbines at commune level, and has generated information that can be used to guide decisions related to the development of wind turbines in the Pyrenean, Causse and Alpine mountain ranges.



Feedback on experiments with lead-free ammunition in Lozère

Following the approach adopted in two other European programmes in France, the Cévennes National Park, in conjunction with the Lozère Departmental Federation of Hunters, launched an experiment using copper ammunition in 45 areas of the park, covering most of the vulture foraging sites. The purpose of this operation was to make the hunting community aware of the impact of using lead ammunition on necrophagous birds of prey in particular. It sought to promote the use of alternative ammunition for large game hunting by raising performance awareness through on-site testing.

- 51 hunters tested lead-free ammunition (24 types of ammunition and 11 different calibres) during two hunting seasons (2017/2018 and 2018/2019)
- 97% of these hunters were satisfied with the use and performance of these bullets. Adaptation requirements and cost need to be improved in order for this approach to be entirely convincing. However, as part of this experiment, the hunters benefited from a 22% reduction in ammunition costs.



INVOLVEMENT OF LOCAL STAKEHOLDERS



Action Communication and public awareness

This action was deployed throughout the LIFE territory and aimed at raising awareness of the LIFE issues. The sociological study conducted at the beginning of LIFE GYPCONNECT showed that, contrary to popular belief, vultures benefit from a majority of benevolent opinions even if a controversy around vulture-livestock interactions persists in certain territories (where vultures are not known) and for certain categories of stakeholders.

Based on the visual identity defined for LIFE GYPCONNECT, various communication tools have been developed: leaflets to promote awareness, «Plume du LIFE» newsletters and dedicated website, etc. Communication and awareness-raising campaigns have been carried out as part of the programme: public meetings, public events linked to the releases, activities for schools and other specific activities, etc. Training days for local stakeholders, managers and users («environmental

Key outcomes

- **Numerous specific awareness-raising tools** have been produced. These include mediation kits, exhibitions, posters, documentary films and videos as well as virtual reality experiences, etc.
- **Educational trails and panels** have been installed in the LIFE areas to provide more information on vultures and the action taken to protect them.
- From 2015 to 2021, more than **231,000 people have benefited** from LIFE actions through 220 events organised since the launch of the project, covering 1582 days of active involvement.

education» network, tourism professionals) have provided a forum for the presentation of the species and the protection and reintroduction actions of the LIFE GYPCONNECT programme. The technical days and three seminars provided an opportunity for local partners and stakeholders to meet, discuss and share knowledge and experiences regarding Bearded Vulture conservation.

Farmers' children involved in the return of the Bearded Vulture

Initial sponsors for one of the bearded vultures released in the Vercors region in 2017, the young people of the association «des Graines d'Éleveurs du Vercors» became passionate about the species and wanted to play a key role in its reintroduction. They have mobilised on numerous occasions to promote the Bearded Vulture, ranging from taking part in awareness days to organising their own release of Bearded Vultures in 2020 with the

Vercors Regional Nature Park. Three years of work were needed to acquire the funds to finance the reintroduction operation and to overcome the numerous obstacles facing them. Thus, in 2020, two young vultures, Palo-Pala and Kobalann, were released in the Vercors region, thanks to the time and energy of these children. They have already collected the necessary funds to release two birds in 2022.

WHAT HAPPENS AFTER THE PROJECT?

Given the remarkable results of the LIFE GYPCONNECT programme, which has led to significant progress in the conservation of the Bearded Vulture in France with the creation and strengthening of population nuclei between the Alps and the Pyrenees, efforts must be maintained in order to guarantee the viability of the species. An increase in numbers is the only guarantee to combat the risk of extinction. The future of the Bearded Vulture thus remains dependent on the flow of individual birds between the various population nuclei and therefore on the capacity for exchange and genetic mixing of its populations, based on the demographic and spatial scenarios of population dynamics created by researchers at Sorbonne University. Reintroduction operations must be continued throughout France along with steps to prevent and combat threats and to deploy feeding sites across the country in order to consolidate the results achieved to date.

A new action plan has been drawn up to ensure the viability of the population being recovered in the project area. This plan has been drafted in response to the new threats identified (the persistence of malicious acts, the current energy development policy and rendering policies in Spain, etc.). New objectives have been defined and new partnerships created.

✓ *The project team is working on setting up a new LIFE project. From this perspective, the European Commission has approved the request of the LIFE team to extend the project to include another year for reintroduction in 2022 and to ensure that actions continue up to the new project launch.*



More information at:

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