



Provincia di Sondrio



Aree Protette  
Alpi Marittime



RISERVA  
NATURALE  
LAGO DI  
CORNINO



INTERNATIONAL  
BEARDED VULTURE  
MONITORING

# December 2025

## Dicembre 2025

39

**Bulletin on Bearded Vulture reintroduction project**  
**Bollettino sul progetto di reintroduzione del Gipeto**

# info GIPETO



*Dedicated to  
Hans Frey*





**A Sweet and Bitter Year for Bearded Vulture Conservation in the Alps**

Dear friends and supporters of the Bearded Vulture,

The year 2025 leaves us with a mixed feeling - one of enthusiasm and hope, but also of new concerns. A sweet and sour year, as often happens when working with a species as complex, fragile, and at the same time extraordinarily resilient as the Bearded Vulture.

On the sweet side, Alpine nature gifted us a historic result. The wild Bearded Vulture population in the Alpine chain reached unprecedented levels, with more than 110 breeding pairs and at least 67 fledged young. This is the highest figure since we started, decades ago, to dream of bringing the species back to the mountains from which it had disappeared. Every fledgling taking to the air is more than a statistic: it is a living symbol of what perseverance, science, and international cooperation can achieve.

The year was also special because of an important anniversary: the Richard Faust Center in Haringsee in Austria - the historical core of the Bearded Vulture captive-breeding programme - celebrated its 50<sup>th</sup> anniversary. Half a century of dedication, innovation, and daily care has enabled hundreds of Bearded Vultures to be born and released into the Alps, Andalusia, and now also the Balkans. And indeed, this year, after 20 years of preparation, we witnessed the first Bearded Vulture releases in the Balkans - a milestone that opens a new chapter in reconnecting the species across Europe.

But together with success come new challenges. The 2025 breeding season in the captive-breeding network was one of the worst ever recorded: only 24 chicks hatched, of which 17 were released into the various projects. Productivity was unusually low, especially in the specialised breeding centres, highlighting the system's vulnerability and the need to further strengthen our knowledge and management capacity.

On top of this, a second bitter note: during the year, two new pathogens were detected in the captive stock - a circovirus and a parasitic nematode - bringing unforeseen veterinary challenges. While concerning, these findings allow us to act in a targeted way and ultimately protect both captive and wild birds more effectively.

In short, 2024 reminds us of something every Bearded Vulture enthusiast knows well: conservation is a long and never linear journey, marked by milestones worth celebrating and obstacles that must be overcome. But it is precisely thanks to the strength of our community - volunteers, observers, photographers, researchers, parks, and public and private partners - that we keep moving forward.

The Bearded Vulture has returned to the Alps because we never stopped believing in it. And it will continue to soar even higher if we continue working together.

Thank you for your support, your passion, and your trust.

For the Bearded Vulture, always.

**Un anno dolceamaro per il Gipeto sulle Alpi**



Cari amici e sostenitori del Gipeto,

il 2025 è stato un anno che ci lascia nel cuore una duplice sensazione, fatta di entusiasmo e speranza, ma anche di nuove preoccupazioni. Un anno dolceamaro, come spesso accade quando si lavora con una specie complessa, fragile e al tempo stesso straordinariamente resiliente come il Gipeto.

Da un lato, la natura alpina ci ha regalato un risultato storico. La popolazione selvatica di gipeti ha raggiunto livelli mai visti, con oltre 110 coppie nidificanti nelle Alpi e almeno 67 giovani involati. Si tratta del valore più alto da quando abbiamo ricominciato, decenni fa, a sognare il ritorno del gipeto sulle montagne da cui era scomparso. Ogni nuovo giovane che prende il volo è molto più di un numero: è il simbolo vivente di ciò che la perseveranza, la scienza e la collaborazione internazionale possono ottenere.

Il 2025 è stato speciale anche per un anniversario importante: il Richard Faust Zentrum di Haringsee, in Austria, il cuore storico dell'allevamento in cattività del gipeto, ha compiuto 50 anni. Mezzo secolo di dedizione, innovazione e cura quotidiana che hanno permesso a centinaia di gipeti di nascere e di essere reintrodotti nelle Alpi, in Andalusia e ora anche nei Balcani. Proprio quest'anno, dopo 20 anni di preparazione, abbiamo assistito ai primi rilasci di gipeti nei Balcani: un risultato epocale che apre un nuovo capitolo nella riconnessione delle popolazioni europee.

Ma, come spesso accade, insieme ai successi arrivano anche nuove sfide. La stagione riproduttiva nei centri di allevamento in cattività è stata una delle peggiori di sempre: solo 24 pulcini nati, di cui 17 rilasciati nei diversi progetti. Una produttività insolitamente bassa, in particolare nei Centri specializzati, ha messo in luce la vulnerabilità del sistema e la necessità di rafforzare ulteriormente la nostra conoscenza e le nostre capacità gestionali. A questo si aggiunge una seconda nota amara: durante l'anno sono stati identificati due nuovi agenti patogeni nel gruppo di allevamento - un virus e un nematode parassita - che hanno introdotto sfide sanitarie del tutto inattese. Queste scoperte, pur preoccupanti, ci permettono di intervenire in modo mirato e di proteggere ancora meglio gli animali, sia in cattività sia in natura.

In sintesi, il 2025 ci ricorda ciò che ogni appassionato di gipeti sa bene: la conservazione è un percorso lungo, mai lineare, fatto di traguardi da festeggiare e di ostacoli da superare. Ma è proprio grazie alla forza della nostra comunità - volontari, osservatori, fotografi, ricercatori, parchi, enti pubblici e privati - che continuiamo ad avanzare.

Il gipeto è tornato sulle Alpi perché non abbiamo mai smesso di crederci. E continuerà a volare sempre più forte se continueremo a farlo insieme.

Grazie per il vostro sostegno, la vostra passione e la vostra fiducia.

Per il Gipeto, sempre.



**50th anniversary**  
Center of Owls and Birds of Prey  
Haringsee



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# Where we left off - Dove eravamo rimasti



It is with great pleasure that we announce that, after a four-year break, we are finally publishing the new issue of Info Gipeto (N. 39), which summarizes updates on the progress of the international conservation project from 2022 to 2025. This splendid initiative was made possible thanks to a new collaboration between Ente Aree Protette Alpi Marittime and Province of Sondrio, which has replaced the Stelvio National Park as co-editor.

È con grande piacere che annunciamo che, dopo una pausa di quattro anni, pubblichiamo finalmente il nuovo numero di Info Gipeto (N° 39) che riassume gli aggiornamenti sullo stato di avanzamento del progetto internazionale di conservazione dal 2022 al 2025. Questa splendida iniziativa è stata resa possibile grazie a una nuova collaborazione tra l'Ente Aree Protette Alpi Marittime e la Provincia di Sondrio, che ha sostituito il Parco Nazionale dello Stelvio come co-editore.

**Enrico Bassi, Gloria Ramello, Fabiano Sartirana, Fulvio Genero,  
Erika Chiecchio & Gabriella Bianchi**

**We would like to thank all of you for making this issue possible**  
**Vogliamo ringraziare tutti voi per la realizzazione di questo numero**





### Fulvio Genero

Riserva naturale regionale Lago di Cornino (Udine, Italy)

Advisory Board - Vulture Conservation Foundation - e-mail: fulvio.genero@gmail.com

Since I was a boy, I was fascinated by sad stories of vultures, which I knew mostly from WWF bulletins, particularly focused on extinctions and poisoning events in Sardinia.

The legendary Bearded Vulture seemed like a myth to me, a fantastic giant that had disappeared from the Alps and was vanishing everywhere. Little was known about the reintroduction project in Italy; I had struggled to obtain those precious "Bulletins" reporting on the first steps of this great adventure annually.

It was a story too inspiring not to witness up close. And so, in the summer of 1986, for the first release in the Rauris Valley in Austria, I went to the Hohe Tauern. It was an experience that changed my life, bringing me into contact with amazing people who were passionately dedicated to the project in a magnificent setting of stunning Alpine valleys where culture and tradition have created great harmony and incredible beauty in the natural and human landscape.

From that time on, I spent summers and my free time up there with my friends from the project: Nina, Karl, Alex, Gerhard, and then Richard Knut, Michael, and many others, joined together with the great dream of seeing the bearded vulture back in the Alps. I was excited to meet the man behind all this, the person who had been working on this initiative for years and who, in that year, had succeeded in reintroducing the first three Bearded Vultures.

An incredible achievement, which all the Alpine countries had been working toward for a long time and had welcomed with extensive outreach and awareness campaigns. In Italy, however, little was known about it, and little information was available about this initiative, which was launched amidst doubts and uncertainties. I was in the valley where the bearded vultures were making their first flights. Hans was coming down, with his inseparable dog "Nana", from the high pastures where he often went to admire them. He was wearing shorts, boots, a cape, and an old-fashioned backpack, found who knows where. He was different from the academics I was used to seeing in Italy.

I was struck by his great simplicity and spontaneity, always available to answer questions and willing to sacrifice himself to help others.

He was (He is!) a person of immense experience and knowledge with whom I never stopped asking questions, curious and fascinated by all aspects of this incredible adventure. Students from the Faculty of Veterinary Medicine in Vienna and volunteers took turns observing and recording all the movements of the released Bearded Vultures. A valley with skies full of life, later called the "Valley of vultures", where, in addition to the first Bearded Vultures, numerous Griffon Vultures and Golden Eagles were present.

From that time on, I have always maintained regular contact with Hans and his collaborators. In those years, everything was pioneering, much relied on enthusiasm, with few resources and equipment available, often provided by Hans himself at his own expense. With his car, I remember a small and battered Peugeot 205, racing around Europe to attend meetings and transport the birds to be released from one end of the Alps to the other. Sometimes we traveled with 4-5 people, plus several dogs, the Bearded Vultures in the trunk, and other welcome guests like a mouse and various spiders. Often long journeys, with stops at the homes of some collaborators or makeshift guesthouses, with Hans tirelessly at the wheel and paying for everyone always. Sometimes, I also had the pleasure of hosting some stops on these European forays, with many friends from various countries.

It all began in his garden, in the plains of Lower Austria, east of Vienna.

A "garden of miracles" in a bucolic Pannonian-style village. A garden with large trees, ponds, and numerous aviaries where Hans, with his incredible experience with animals and placing all kinds of nesting boxes, lives with nesting colonies of Grey Herons, Jackdaws, and Kestrels, as well as a few pairs of Eagle Owls, Black Kites, Little Owls, and Barn Owls in the attic. Scattered throughout the vegetation are many aviaries housing hundreds of birds of various species, some for medical care, others as part of reintroduction projects and bred to release their juveniles. Among these, some large ones house a dozen pairs of Bearded Vultures: a large part of the "capital" that, with the juveniles born, has made possible to reintroduce the Bearded Vulture in the Alps, Andalusia, Balkans and other countries, and allowed the creation of other breeding centers and the involvement of numerous zoos in the project.

## Hans Frey: The miracle of bringing the Bearded Vulture back to the Alps

The Center not only houses Bearded Vultures, but also over a dozen pairs of Ural Owls, which provide juveniles for reintroduction programs in Austria and elsewhere. Other aviaries house Cinereous Vultures, Egyptian Vultures, and White-tailed Eagles, with a continuous increase of new facilities making it one of the most important centers in the world. His university career, combined with his study and care of wildlife, has allowed him to devise the best recovery and reintroduction techniques.

A "love" that also led him to pair up with an imprinted Bearded Vulture "Mr. President", who was then able to raise chicks born to other pairs or in an incubator.

His dream was, and still is, to see the Bearded Vulture back in the Alps. The passion and commitment with which he has followed and continues to support the project are exemplary, following every phase from captive breeding to reintroduction into the wild, providing a fundamental contribution based on his extensive knowledge of veterinary, medicine, ethology, and ecology. This project is part of his life.

His profound and attentive gaze evaluates and analyzes his Bearded Vultures. Every day, he makes the rounds of the aviaries to provide food and checks that everything is in order.

An enormous commitment is required for each Bearded Vulture bred and released, decades of work that cause profound disappointment when something goes wrong or a Bearded Vulture dies from poaching or lead poisoning (saturnism).

I was with him at the University of Vienna in 2008 when messages arrived from Sardinia reporting the death by poisoning of the three released bearded vultures. Hans was visibly distraught; so much work had been wasted not because of organizational errors but because of the bad faith of someone who had hidden the truth. This was the only failure in a series of great successes in the projects of the Foundations (FCBV Foundation for the Conservation of the Bearded Vulture, BVCF Black Vulture Conservation Foundation, and then Vulture Conservation Foundation VCF) that Hans, together with others, founded and supported for the conservation of vultures.

Hans has always been a key figure, knowledgeable and well informed about every aspect of birds of prey, always available and courteous in providing help and suggestions. He has provided essential support in all projects worldwide.

In Italy too, it was thanks to him that the Griffon Vulture project in the Eastern Alps was able to start and receive support.

In addition to providing the first Griffon Vultures for the reintroduction, he came to Friuli (NE Italy) several times to convince authorities and administrators of the importance of this project. I can only be infinitely grateful to Hans for all the experiences he has allowed me to share, for connecting me with the most important conservation projects and experts, and for teaching me so many things. I have great admiration for him, a great scientist who has respect for all forms of life and the humility to share his knowledge with everyone, who has always fought for the conservation and welfare of animals without any interest in fame or publicity, but only out of the respect and love that bind him to nature.

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### Storie di gipeti e...

#### Hans Frey: il miracolo di far ritornare il Gipeto sulle Alpi



Fin da ragazzo ero affascinato dalle storie, purtroppo tristi, degli avvoltoi, che conoscevo soprattutto grazie ai bollettini del WWF che parlavano in particolare di estinzioni e avvelenamenti in Sardegna.

Il leggendario Gipeto, in particolare, mi appariva come un mito, un fantastico gigante oramai scomparso dalle Alpi che stava scomparendo ovunque. Del progetto di reintroduzione si sapeva poco in Italia, ero riuscito con difficoltà a ricevere i preziosi "Bollettini" che annualmente raccontavano i primi passi di questa grande avventura. Una storia troppo stimolante per non vederla da vicino. E così, nell'estate 1986, in occasione del primo rilascio nella Valle di Rauris in Austria, sono andato sugli Alti Tauri. Un'esperienza che ha cambiato la mia vita, che mi ha messo in contatto con persone fantastiche che con grande passione si dedicavano al progetto in un ambiente grandioso di stupende vallate alpine dove cultura e tradizione hanno creato una grande armonia e incredibile bellezza nel paesaggio naturale e umano.

Da quella volta ho passato per molti anni l'estate e ogni periodo libero lassù con gli amici del progetto: Nina, Karl, Alex, Gerhard e poi Richard Knut, Michael e molti altri, uniti dal grande sogno di rivedere il Gipeto sulle Alpi.

Ero emozionato a conoscere il fautore di tutto questo, la Persona che da anni lavorava per questa iniziativa e che in quell'anno era riuscita a reintrodurre i primi tre gipeti. Un traguardo incredibile, al quale tutti i Paesi alpini lavoravano da tempo e avevano accolto con vaste campagne di divulgazione e sensibilizzazione. In Italia invece si sapeva poco, e poche erano le informazioni su questa iniziativa che si avviava tra dubbi e incertezze.

Ero nella valle dove i gipeti stavano compiendo i primi voli. Hans scendeva, con la sua inseparabile cagnolina Nana, dagli alti pascoli dove spesso si recava per ammirarli. Pantaloni corti, scarponi, mantella e zaino di vecchio stampo recuperati chissà dove. Diverso dagli accademici che ero solito vedere in Italia. Mi ha colpito la sua grande semplicità e spontaneità, sempre disponibile con tutti per rispondere alle domande e pronto a sacrificarsi per aiutare gli altri.

Una persona di grandissima esperienza e conoscenza alla quale non finivo di fare domande, curioso e affascinato da tutti gli aspetti di questa incredibile avventura. Collaboravano gli studenti della Facoltà di Veterinaria di Vienna e volontari che a turno venivano a scrutare e registrare tutti i movimenti dei gipeti liberati. Una valle con i cieli pieni di vita, chiamata poi la valle degli avvoltoi, dove oltre ai primi gipeti giravano numerosi grifoni e aquile reali.

Da quella volta ho sempre mantenuto un contatto regolare con Hans e i suoi collaboratori. In quegli anni era tutto pionieristico, molto si basava sull'entusiasmo e pochi erano i mezzi e le attrezzature disponibili, spesso forniti da Hans stesso e a sue spese. Con la sua auto, ricordo una piccola e scassata Peugeot 205, si correva in giro per l'Europa per partecipare a incontri e portare, da un capo all'altro delle Alpi, gli uccelli da liberare. Capitava di viaggiare in 4-5 persone più vari cani, i gipeti nel bagagliaio e altri graditi ospiti come un topolino e ragni vari. Si trattava di viaggi spesso lunghi, con tappe in casa di qualche collaboratore o pensioni di fortuna con Hans instancabile sempre alla guida e che pagava per tutti. A volte ho avuto anch'io il piacere di ospitare qualche tappa di queste scorribande per l'Europa, con l'arrivo di tanti amici provenienti da diversi Paesi.

Il tutto è nato nel suo giardino, nelle pianure della Bassa Austria, a est di Vienna.

Un "giardino dei miracoli" in un bucolico paesino di stile pannonico. Un giardino con grandi alberi, stagni e tante voliere dove Hans, con la sua incredibile esperienza con gli animali e collocando anche cassette nido di tutti i tipi, convive con colonie nidificanti di aironi cenerini, taccole, gheppi, oltre a qualche coppia di Gufo reale, Nibbio bruno, Civetta e Barbagianni in soffitta. Sparse nella folta vegetazione ci sono tante voliere che ospitano centinaia di uccelli di varie specie, alcuni per essere curati, altri fanno parte di progetti di reintroduzione e vengono fatti riprodurre per liberare in seguito i giovani nati. Tra queste, alcune di grandi dimensioni ospitano una decina di coppie di gipeti: buona parte di quel "capitale" che con i giovani nati ha consentito di riportare il Gipeto sulle Alpi e successivamente in Andalusia e sui Balcani ha permesso di creare anche altri centri di riproduzione e coinvolgere numerosi zoo nel progetto.

Al Centro non ci sono solo gipeti, ma oltre una decina di coppie di allocchi degli Urali che forniscono giovani per le reintroduzioni in atto in Austria e altrove. In altre voliere ancora ci sono avvoltoi monaci, capovacciai, aquile di mare, con un continuo crescendo di nuove strutture che ne fanno uno dei Centri più importanti a livello mondiale.

La carriera universitaria, abbinata allo studio e cura della fauna selvatica, hanno consentito di escogitare le migliori tecniche di recupero e reintroduzione in natura.

Un "amore" che lo ha portato anche a fare coppia con un Gipeto improntato "Mr. President" che era in grado poi di allevare giovani nati da altre coppie o schiusi in una incubatrice.

Il suo sogno era ed è rivedere il Gipeto sulle Alpi. La passione e l'impegno con cui ha seguito e segue il progetto sono esemplari, seguendone tutte le fasi dalla riproduzione in cattività alla reintroduzione in natura, fornendo un fondamentale contributo legato alle sue grandi conoscenze di veterinaria, medicina, etologia ed ecologia. Questo progetto fa parte della sua vita. Il suo sguardo profondo e attento valuta e analizza i suoi gipeti. Ogni giorno fa il giro delle voliere per fornire il cibo e controllare che tutto sia in ordine. Un impegno enorme richiesto per ogni Gipeto allevato e liberato, un lavoro di decenni che provoca profonde delusioni quando qualcosa non funziona o qualche Gipeto muore per bracconaggio o per intossicazione da piombo (saturnismo). Ero con lui all'Università di Vienna nel 2008 quando arrivavano i messaggi dalla Sardegna che comunicavano la morte per avvelenamento dei tre gipeti liberati. Hans era visibilmente turbato; tanto lavoro vanificato non per errori organizzativi ma per la malafede di qualcuno che aveva nascosto la realtà. L'unico fallimento in una serie di grandi successi nei progetti delle Fondazioni (FCBV Foundation for the Conservation of the Bearded Vulture, BVCF Black Vulture Conservation Foundation e poi VCF Vulture Conservation Foundation) che Hans, assieme ad altri, ha fondato e sostenuto per la conservazione degli avvoltoi.

## Hans Frey: The miracle of bringing the Bearded Vulture back to the Alps

Hans è sempre stato un punto di riferimento fondamentale, informato e conoscitore di qualsiasi aspetto riguardante i rapaci, sempre disponibile e cortese nel fornire aiuto e suggerimenti. Ha fornito un supporto fondamentale in tutti i progetti a livello mondiale.

Anche in Italia, grazie a lui è stato possibile avviare e gestire il Progetto Grifone sulle Alpi Orientali. Oltre ad aver fornito i primi grifoni da reintrodurre, è venuto diverse volte in Friuli per convincere autorità e amministratori dell'importanza di questo progetto.

Non posso che essere infinitamente grato ad Hans per tutte le esperienze che mi ha consentito di condividere, per avermi messo in contatto con i più importanti progetti ed esperti della conservazione e avermi insegnato tante cose. Ho una grande ammirazione per lui, un grande scienziato che ha rispetto per ogni forma di vita e l'umiltà di condividere con tutti le sue conoscenze, che ha sempre lottato per la conservazione e il benessere degli animali senza alcun interesse per la fama e la pubblicità ma solo per il rispetto e l'amore che lo legano alla natura.



**Figure 1 - A forever young Fulvio Genero with a juvenile of Bearded Vulture (named "Fulvio") at the releasing site.**

Un sempre giovane Fulvio Genero con un giovane Gipeto (soprannominato "Fulvio") in un sito di rilascio.

# Update on the Alpine Bearded Vulture population and the International Bearded Vulture Monitoring 2022-2025



**Mirco Lauper**

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Since the first reintroduction of Bearded Vultures in the Alps in 1986, not only has the population steadily grown, but so has the IBM network, which has been coordinating and monitoring this process for many years. With new members from Germany, Austria, and Bulgaria the network is further expanding its reach across the eastern Alps and the Balkans. New partners in France strengthen the existing several partners to cover the monitoring areas even better.

Through the European Endangered Species Programme (EEP) and coordinated reintroduction efforts led by the Vulture Conservation Foundation (VCF), 73 Bearded Vultures have been released over the past four years (2022-2025) in strategically selected regions. A milestone was reached in 2025 with the first reintroductions in Bulgaria since the species' extinction there in 1972, marking a major step toward restoring ecological connectivity across Europe.

Between 2022 and 2025, 56 dropouts were documented, with nearly half of all mortalities linked to anthropogenic causes. Despite these challenges, the network's coordinated actions have enabled the rescue and recovery of 20 birds, many of which were successfully returned to the wild (n=16).

During the same time period, the number of monitored Bearded Vulture territories in the Alps increased by 43% (83 → 119), with number of fledglings rising by 39% (49 → 68) and breeding success averaging 74%.

In Corsica, breeding in the wild succeeded in 2025 after three failed seasons, with established pairs increasing from 2 to 4. In the Massif Central, a second breeding pair was established in 2024, marking progress towards a stepping stone population.

These results highlight the effectiveness of coordinated cross-border conservation efforts to restore a stable and genetically diverse European Bearded Vulture population.

## IBM-network

The International Bearded Vulture Monitoring (IBM) is an international network to coordinate the monitoring activities for European Bearded Vulture populations, to unify and manage data collections in a shared database (IBM-database) and to discuss conservation strategies and priorities for this species on an international level. In 2025, the IBM-network comprised 23 partners and 5 associated organisations. With four new partners, "National Park Berchtesgaden" (DE) and Naturparke Tirol (AT) in the eastern Alps, "Green Balkans" in Bulgaria and Parc national des Cévennes (FRA), the European monitoring network is expanding.

## Releases

Through the European Endangered Species Programme (EEP), the excellent collaboration and coordination among breeding centres, and the strong support of IBM partners, a total of 73 Bearded Vultures have been successfully released over the past four years. Ultimately, the long-term objective is to establish a stable and genetically diverse European metapopulation, fostering genetic exchange between populations in North Africa and Eastern Europe. Achieving this vision relies on robust monitoring systems like the IBM-network, which are essential for tracking movements, assessing connectivity, identifying emerging threats, and coordinating conservation measures at a European scale.

Despite these extensive efforts, not all reintroduction attempts have been successful. In recent years, the main causes of failure have been predation by foxes and infectious diseases. Out of a total of 78 birds released during this period, five cases of unsuccessful releases have been documented: in 2025, two cases in Bulgaria - Balkan (1255) and LifeBG (1258) - and one in the Massif Central Unvers (BG1271); as well as two cases in Andalusia - Torreferussa (BG1209) in 2024 and Tavares (BG1160) in 2023.

With the long-term goal of restoring a sustainable European Bearded Vulture metapopulation, the VCF is implementing a forward-thinking strategy - including targeted releases in the last four years:

- A) release of 5 birds in Melchsee-Frutt (CH), to increase the genetic diversity of the Alpine population;
- B) release of 6 birds in both, Vercors (FR) as well as Baronnies (FR), 8 in Berchtesgaden (DE), 4 in Corsica (FR) and 23 in Andalusia (ES) in areas where breeding territories have not been established in large numbers;

## Update on the Alpine Bearded Vulture population and the International Bearded Vulture Monitoring 2022-2025

C) 13 birds were released in the Massif Central and 10 juveniles in Maestrazgo to restore genetic connectivity between the Bearded Vulture populations in the Alps, Pyrenees, and Andalusia. These areas serve as critical "stepping-stone" zones to facilitate population exchange;

D) In a historic milestone, 3 Bearded Vultures were released in Kutelka-west (BG) in 2025 - the first such effort since the species was declared extinct in the region in 1972. This reintroduction not only aims to restore the local population but also to create a vital ecological corridor linking the Alpine population with those in Greece and Turkey. Unfortunately, only one of the three birds fledged into the wild in 2025 (see below). This release is the first step to bring the species back to the Balkans.

### Dropouts

Thanks to the cooperation of the IBM partners, 56 dropouts could be documented within the monitoring area between 2022 and 2025 (Figure 2). Dropouts include all incidents where individuals are removed from the population (mortality, recapture). This also applies to birds that have been recaptured and could be released again (recovery). A recapture is in any case the last solution, which is why it must be assumed that these birds would not have survived without human intervention and would have died. Only cases occurring after the first flight are included in this compilation. Therefore, unsuccessful releases are not listed here.

**Mortalities** - Within the last four years, 36 mortalities have been reported from eight countries. A large proportion of deaths (47%) are attributable to anthropogenic causes, while natural causes account for a further 25% of cases and the reasons for the remainder (28%) remain unclear (see also Table 1). Anthropogenic causes of fatalities included collisions with powerlines or cables (n=5), poisoning (n=4), shooting (n=3), electrocution (n=2), accidents involving helicopters or trains (n=2), and collision with a wind turbine (n=1). Mortalities were most frequently reported at an early age: 25 of the 36 documented cases (69%) involved juvenile or immature birds, while only 9 fatalities were among subadult or adult animals. Interestingly, however, almost as many mortalities were recorded among wild-hatched (n=17) birds as among released birds (n=19). But, 7 birds out of 17 wild-hatched birds that died were equipped with a GPS tag and therefore detection probability increased also for these birds.

**Recoveries** - In 16 cases out of the 56 dropouts (29%), thanks to close monitoring (including GPS data) or accidental findings in the field, animals were rescued from their predicament and released back into the wild. While most animals (88%) were captured due to misbehaviour or weakness (natural or unknown causes), there were also incidents due to anthropogenic influences: the immature Donna Elvira (BG1117), for example, was rescued after colliding with a cable in 2022, while the adult Guillaume (BG0411) was freed from being entangled in a fence in 2024. Most of the rescued birds were released birds (n=12; 75%) and juveniles (n=8) or immatures (n=4), with only a few older birds affected (3 adults, 1 subadult).

**Recaptures** - Unfortunately, some animals could not be released back into the wild and remain in captivity, as reintroduction was no longer possible for various reasons.

2025: The juvenile bird Avers2025 suffered a complex wing fracture after falling from the nest during its first flight and died later during recovery.

2023: Due to a lack of fear of humans, the juvenile bird Marco (BG1180) had to be recaptured shortly after release. In the same year, Veronika (BG0321, 25.cy) was captured after becoming flightless due to arthritis.

2022: The wild-hatched adult bird Roc Genève from the Pyrenees, and marked as a chick in the nest, was captured following a shoulder dislocation and died later in captivity.

### Reproduction

**Alps** - Over the past four years, the number of Bearded Vulture territories monitored by the IBM network has increased by 43%, rising from 83 in 2022 to 119 in 2025. At the same time, the number of fledglings has risen by 39%, from 49 in 2022 to 68 in 2025. This encouraging development continues the steady increase observed over the past several years, with regional variations. While three of the four Alpine zones show a clear rise in successful breeding, the numbers in the Eastern Alps remain more variable and at a lower level.

# Update on the Alpine Bearded Vulture population and the International Bearded Vulture Monitoring 2022-2025

The breeding success over the past four years (74%) was slightly higher compared to the previous four-year period (2018-2021), which saw a success rate of 71%. Similarly, productivity<sup>1</sup> was also higher, averaging 67.8% in the period from 2022 to 2025, compared to 66.8% in the preceding four years.

**Corsica** - After three consecutive unsuccessful breeding seasons, one chick fledged from a newly established pair, consisting of two released birds. At the same time, the number of established pairs increased from 2 to 4. Despite regular breeding attempts, breeding success remains relatively low in Corsica, which is why measures are being taken to support the local population (LIFE Gyp-Rescue project).

**Massif Central** - Since 2018, two male Bearded Vultures have displayed territorial behaviour, and in 2024, a new breeding pair was established consisting of the two released birds Calandretto (BG0984, adult) and Aven (BG1067, subadult). These developments represent significant progress toward the first breeding in this region, that should serve as a stepping-stone area between Alpine and Pyrenean populations.

**Andalusia** - The number of monitored territories rose from 9 to 12, while breeding pairs doubled from 6 to 12. Successful reproductions - measured by chicks fledged - also increased steadily, from 0 to 6 (see Table 1).

**Table 1 - Overview statistics on releases, dropouts and reproduction between 2022-2025 within monitoring area of the IBM-network.**

Quadro di sintesi sui rilasci, recuperi ed eventi riproduttivi tra il 2022 e il 2025 nell'area di pertinenza della Rete IBM.

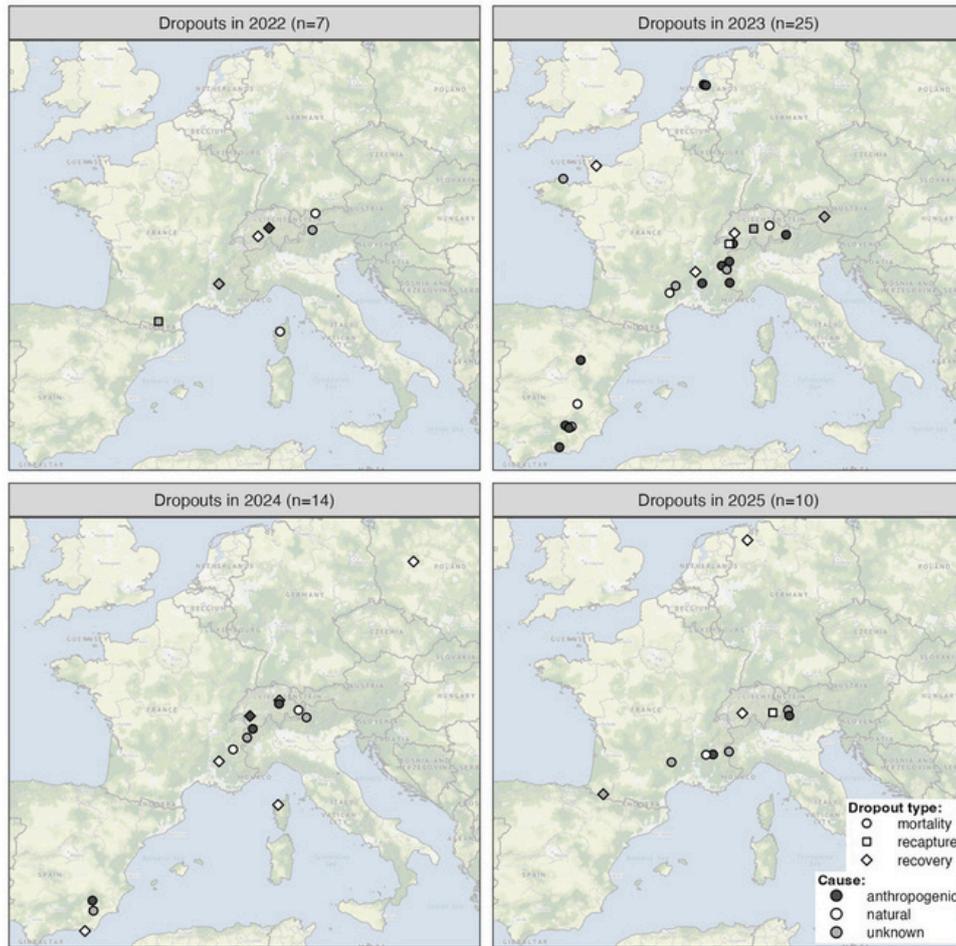
Reproduction	2022	2023	2024	2025
<b>Alps</b>				
Monitored territories	72	84	98	112
Breeding pairs	67	76	85	91
Chicks	49	59	61	67
<b>Massif Central</b>				
Monitored territories	1	1	2	2
Breeding pairs	0	0	0	0
Chicks	0	0	0	0
<b>Corsica</b>				
Monitored territories	2	3	4	4
Breeding pairs	2	2	4	4
Chicks	0	0	0	1
<b>Andalusia</b>				
Monitored territories	9	10	11	12
Breeding pairs	6	8	9	12
Chicks	0	2	4	6
<b>Total breeding success</b>	<b>49</b>	<b>59</b>	<b>61</b>	<b>68</b>

Releases	2022	2023	2024	2025	Total
<b>Alps</b>	4	8	9	4	<b>25</b>
Berchtesgaden	2	2	2	2	<b>8</b>
Melchsee-Frutt		2	3		<b>5</b>
Vercors		2	2	2	<b>6</b>
Baronnies	2	2	2		<b>6</b>
<b>Massif Central</b>	2	4	4	3	<b>13</b>
<b>Corsica</b>	2		2		<b>4</b>
<b>Spain</b>	6	10	9	8	<b>33</b>
Maestrazgo	2	3	3	2	<b>10</b>
Andalusia	4	7	6	6	<b>23</b>
<b>Bulgaria</b>				3	<b>3</b>
<b>Total</b>	<b>14</b>	<b>22</b>	<b>24</b>	<b>18</b>	<b>78</b>

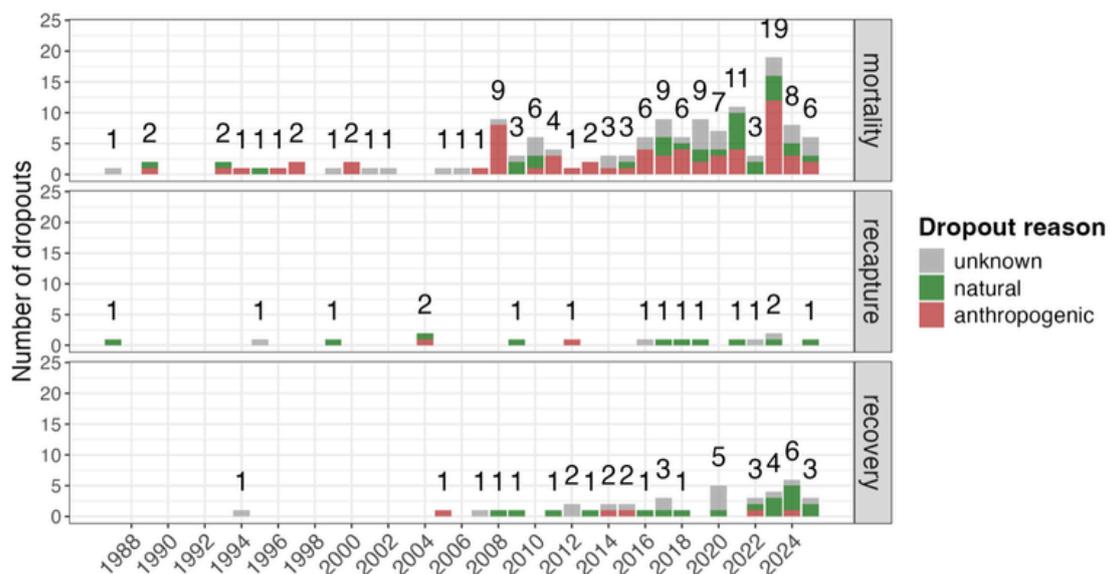
Dropouts	2022	2023	2024	2025	Total
<b>Mortalities</b>	3	19	8	6	<b>36</b>
anthropogenic		12	3	2	<b>17</b>
natural	2	4	2	1	<b>9</b>
unknown	1	3	3	3	<b>10</b>
<b>Recptures</b>	1	2		1	<b>4</b>
natural		1		1	<b>2</b>
unknown	1	1			<b>2</b>
<b>Recoveries</b>	3	4	6	3	<b>16</b>
anthropogenic	1		1		<b>2</b>
natural	1	3	4	2	<b>10</b>
unknown	1	1	1	1	<b>4</b>
<b>Total</b>	<b>7</b>	<b>25</b>	<b>14</b>	<b>10</b>	<b>56</b>

<sup>1</sup>Productivity is defined as the ratio of successful breeding events (chick fledged) to the number of territories with a recorded nest or breeding activity, occupied by a subadult (5<sup>th</sup>- 6<sup>th</sup> calendar year) or adult (≥6<sup>th</sup> calendar year) Bearded Vulture.

# Update on the Alpine Bearded Vulture population and the International Bearded Vulture Monitoring 2022-2025

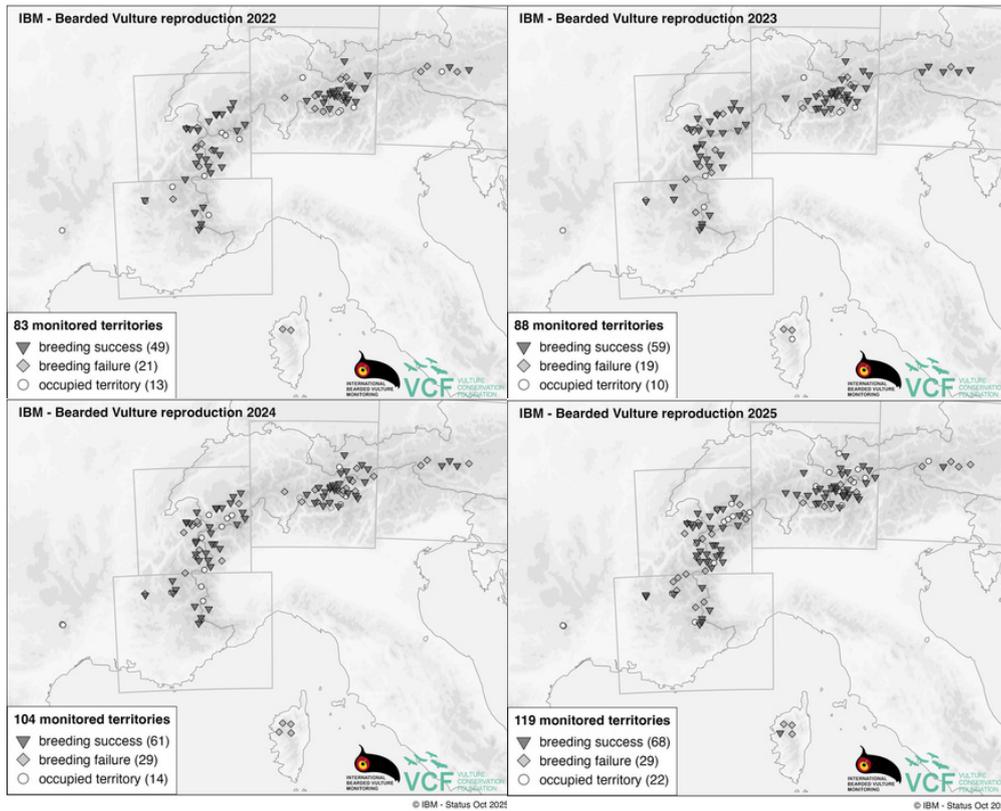


**Figure 1 -** Between 2022 and 2025, 56 Bearded Vulture dropouts were reported to the IBM (36 mortalities, 16 recoveries and 4 recaptures). While causes are diverse - primarily natural (38%) and anthropogenic (34%) - a substantial proportion (28%) remains unidentified even after thorough research. Tra il 2022 e il 2025, 56 gipeti sono stati recuperati (36 casi di mortalità, 16 soggetti ritrovati ancora in vita e 4 ricatture). Tra le cause spiccano quelle legate a variabili naturali (38%) e antropiche (34%) ma una sostanziale proporzione (28%) si riferisce a cause ignote nonostante le indagini accurate. In questo elenco si includono tutti i casi in cui sono stati rimossi degli individui dalle popolazioni che vivono in natura (mortalità e ricatture).

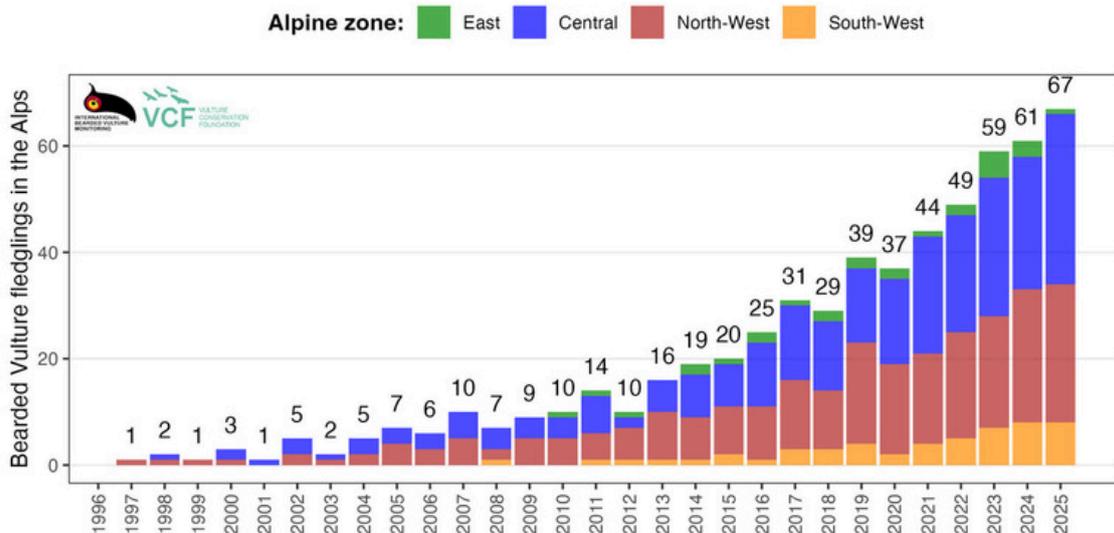


**Figure 2 -** Overview of documented Bearded Vulture dropouts (mortalities, recaptures, and recoveries) within the IBM monitoring area. Cases were classified according to their cause as anthropogenic, natural, or unknown. Sintesi dei recuperi di Gipeto (eventi di mortalità, ricatture e recuperi) documentati dalla Rete internazionale IBM. I casi sono stati suddivisi, in base alla causa di recupero, tra quelli di origine antropica, naturale e ignota.

# Update on the Alpine Bearded Vulture population and the International Bearded Vulture Monitoring 2022-2025



**Figure 3 - Bearded Vulture reproduction in the Alps, Corsica and the Massif Central (2022-2025).** During this period the number of monitored territories expanded from 83 to 119 (36 discovered territories), while the number of fledglings increased from 49 to 68. The grey squares represent the four Alpine zones: eastern, central, north-western, south-western Alps. La riproduzione del Gipeto sulle Alpi, Corsica e Massiccio Centrale (2022-2025). In questo periodo il numero di territori monitorati è incrementato da 83 a 119 (36 nuovi territori) mentre il numero di giovani involati è aumentato da 49 a 68. I quadranti in grigio rappresentano i 4 settori alpini: Alpi orientali, centrali, nord-occidentali e sud-occidentali.



**Figure 4 - The number of Bearded Vulture fledglings in the Alps has steadily increased in recent years. However, the number of successful reproductions varies significantly by region, with the Central and North-western Alps showing much higher numbers compared to the South-western and Eastern Alps.** Il numero di gipeti involati sulle Alpi è costantemente cresciuto negli anni più recenti. Tuttavia, il numero di riproduzioni di successo varia notevolmente a seconda della regione: le Alpi centrali e nord-occidentali registrano numeri molto più elevati rispetto alle Alpi sud-occidentali e orientali.

## Update on the Alpine Bearded Vulture population and the International Bearded Vulture Monitoring 2022-2025

### Aggiornamento sulla popolazione alpina e sul monitoraggio internazionale del Gipeto (2022-2025)



Dalla prima reintroduzione di Gipeto nelle Alpi, avvenuta nel 1986, non solo la popolazione è cresciuta costantemente, ma anche la Rete IBM, che coordina e monitora questo processo da molti anni.

Con i nuovi membri provenienti da Germania, Austria e Bulgaria, la Rete sta espandendo ulteriormente il suo raggio di azione nelle Alpi orientali e nei Balcani. Nuovi partner in Francia rafforzano la già consistente Rete nazionale per coprire ancora meglio le aree di monitoraggio.

Grazie al Programma EEP (European Endangered Species Programme) e agli sforzi coordinati di reintroduzione guidati dalla Vulture Conservation Foundation (VCF), negli ultimi quattro anni (2022-2025) sono stati rilasciati 73 gipeti in regioni strategicamente selezionate. Un traguardo è stato raggiunto nel 2025 con le prime reintroduzioni in Bulgaria dopo l'estinzione della specie nel 1972, che segna un passo importante verso il ripristino della connettività ecologica tra le sue metapopolazioni in tutta Europa.

Tra il 2022 e il 2025, sono stati documentati 56 casi di recupero da cui risulta che quasi la metà dei casi mortali era legata a cause antropiche. Nonostante queste sfide, le azioni coordinate della Rete IBM hanno permesso la ripresa di 20 uccelli, molti dei quali sono stati reintrodotti con successo in natura (n=16).

Nello stesso periodo, il numero di territori monitorati del Gipeto nelle Alpi è aumentato del 43% (83 → 119), con un aumento del numero di giovani involati del 39% (49 → 68) e un successo riproduttivo medio del 74%. In Corsica, la riproduzione in natura è riuscita nel 2025, dopo tre stagioni fallimentari, con un aumento delle coppie insediatesi da 2 a 4.

Nel Massiccio Centrale, nel 2024, una seconda coppia riproduttiva si è stabilita, segnando un avanzamento verso l'affermazione di un'ulteriore metapopolazione che funga da collegamento tra quella pirenaica e quella alpina.

Questi risultati evidenziano l'efficacia del coordinamento degli sforzi di conservazione transfrontaliera per ripristinare una popolazione europea di Gipeto stabile e geneticamente diversificata.



**Figure 5 - Five Bearded Vultures in flight on Ötztal Alps (19<sup>th</sup> September 2025).**

Cinque gipeti in volo sulle Alpi dell'Ötztal (19 Settembre 2025).



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<sup>2</sup>EEP co-coordinator, Richard Faust Zentrum (Austria) - e-mail: h.frey@4vultures.org

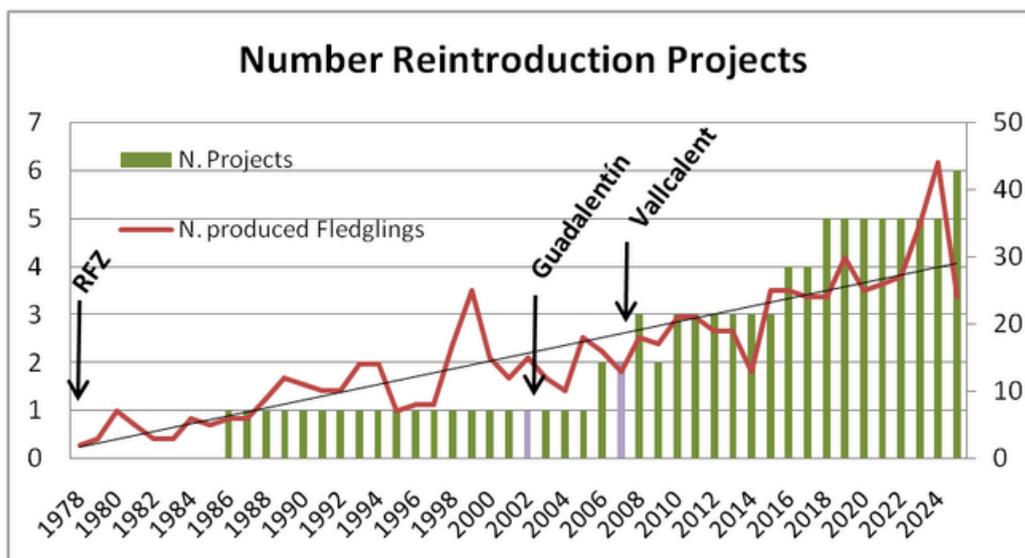
## Introduction

Since 1978, when the International Bearded Vulture captive breeding program started, long before the EEP existed, 741 fledglings have been produced, being most of them (443) used reintroduction projects. Initially this program started as the basis for the reintroduction project of the Bearded Vulture in the Alps (FZG 832/78; WWF 1567/78). Thanks to the positive results obtained within the EEP, it was possible to expand the initial objectives, starting several reintroduction projects in several European countries (Spain, France and Bulgaria) with the goal to set an European meta-population of Bearded Vultures, creating gene flow between the existing isolated autochthonous populations in Europe (in the Pyrenees, Corsica, and Crete) and with populations in North Africa and in Asia.

## Breeding results

One of the keys to this success has been the creation of additional specialised breeding centres (Centro de Cría Guadalestín in 1996 and the Bearded Vulture breeding Unit at the Recovery Centre from Vallcalent 2005), as the average reproduction rate at the three large Specialised Breeding Centres (SBC) is twice that of the rest of EEP partners, Breeding Centres BC (0.96 fledglings/breeding pairs and 0.43 fledglings/breeding pairs respectively; 2004-2025).

This difference and that the potential for producing chicks inside the EEP has increased during the last years, is clearly reflected in the period 2022-2025. In just four years, 130 birds were raised (17.54% of the total number of chicks bred within the EEP), allowing 76 nestlings to be released (17.15% of all released nestlings). The breeding programme also benefited from these positive results, growing from 172 birds in 2022 to 195 in 2025. It has taken 50 years of captive breeding to achieve the goal that was set long ago when the programme began in 1978 with 25 captive birds: a captive population of 200 birds. These results are mainly achieved due to the excellent results obtained in 2023 and 2024 (Table 1).



**Figure 1 - The black arrows represent the start of chick production at the specialized breeding centres (RFZ Richard Faust Zentrum, Guadalestín and Vallcalent).** Le frecce nere indicano l'inizio della produzione di nidiacei nei Centri di allevamento specializzati (RFZ Richard Faust Zentrum, Guadalestín e Vallcalent).

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# THE BEARDED VULTURE EEP: Results 2022-25

**Table 1 - Overview of the European Endangered Species Programme (EEP) results (2022-2025).**  
Risultati principali dell'European Endangered Species Programme (EEP) nel periodo 2022-2025.

Year Anno	Breeding pairs* Coppie riproduttive	Eggs Uova	Embrios Embrioni	Hatchlings Schiuse	Fledglings Pulcini	Released birds Uccelli rilasciati	Included EEP Inclusi in EEP
2022	46	72	46	34	27	14	13
2023	46	79	48	37	35	21	14
2024	44	74	64	49	44	24	20
2025	43	66	41	30	24	17	7

\*Breeding pairs: includes only pairs with the potential to produce chicks. Foster pairs that only lay infertile eggs for various reasons are not included (advanced age, physical disabilities or behavioural disorders, etc.). \*Coppie riproduttive: include solo le coppie con il potenziale per produrre pulcini. Non sono incluse le coppie adottive che depongono solo uova sterili per vari motivi (età avanzata, disabilità fisiche o disturbi comportamentali, ecc.).

During this period, the difference in productivity between the SBC and BC was smaller than usual. Of the 130 fledglings produced, 73 came from the SBC, which had 79 breeding pairs (breeding success 0.92), while the remaining 57 fledglings were produced by 100 pairs at other breeding centres/zoos (BC) with a breeding success of 0.57. This smaller-than-expected gap was largely due to unusually low reproduction at Guadalentín and Richard Faust Zentrum (RFZ) during the 2025 season, with SBC achieving a breeding success of only 0.55, slightly below the BC rate of 0.57.

On the other hand, breeding success at the BC has improved, averaging 0.57 fledglings per breeding pair over the past four years. This improvement is largely attributable to direct support from the EEP coordinator, who advised zoos with inexperienced breeding pairs on daily nest management and supplemental feeding according to chick development during the first weeks of life. Over this four-year period, 26 of the 28 hatchlings directly supported by the coordinator survived, representing 45.6% of all fledglings produced at BC (n = 57).

What is remarkable about these four years are the two records set in 2023 and 2024 with 35 and 44 fledglings produced respectively. The excellent breeding results in 2023 is mainly due to the high survival rate of hatchlings (94.59%; average 2019-2025 83.07%), as the rest of the breeding parameters were similar as the average (% of fertile eggs and hatch rate).

On the other hand, the incredible result of 44 descendants in 2024 is due the high number of fertile eggs 86.49% (average 68,09%), but the rest of the parameters were also above average (76.56% for hatch rate and 89.80% survival rate of hatchlings; average 2019-2025 75.82% and 83.07% respectively).

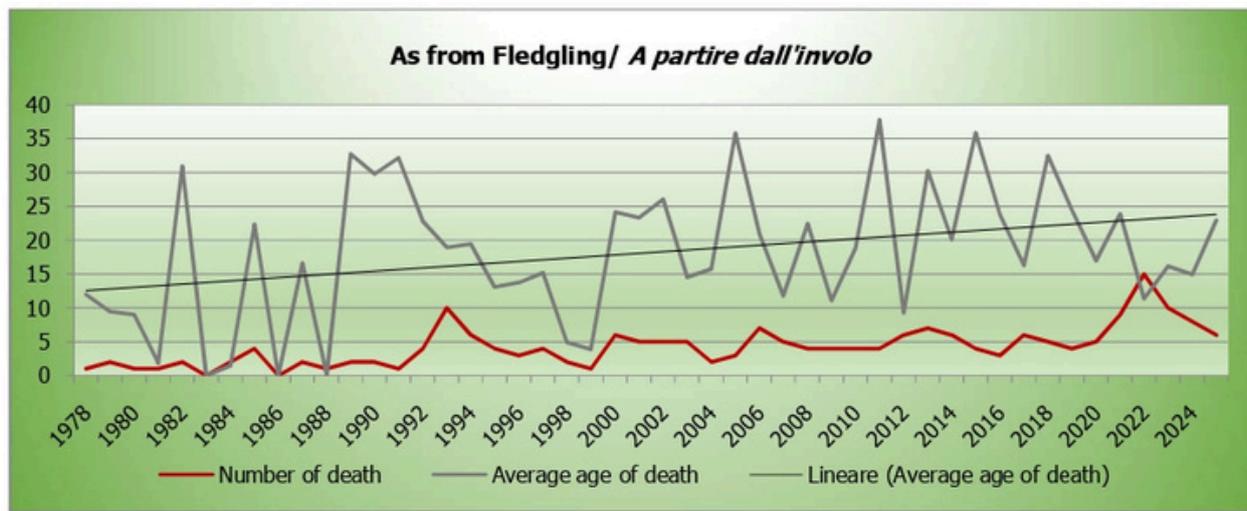
Not only were records broken in general, but also at the individual level. At RFZ, the record for the number of birds raised at a single centre was broken in 2023 with 11 fledglings, and in 2024 with 14 fledglings. However, in 2025, the poor results obtained in Guadalentín and n RFZ significantly lowered the average breeding parameters (62.12% fertile eggs, 73.17% hatch rate and 80.0% survival rate of hatchlings).

## Losses

Over the past four years, the EEP has experienced its highest casualty numbers since the programme began: 39 birds, representing 19.2% of all recorded deaths (n = 203). The year with the greatest losses was 2022, when 15 birds died (8.7% of the captive population). Particularly noteworthy is the decline in the average age at death between 2022 and 2024, which ranged from 11.4 to 16.2 years, well below the average of 19.6 years (1978-2025). This decrease is largely attributable to an unusual rise in fledgling mortality, a phenomenon rarely seen during the first decades of the programme (Figure 2).

The first fledgling death was recorded in 1994, caused by aspergillosis secondary to an avian pox infection. Nearly 20 years passed before the next juvenile mortality occurred in 2012, when a young bird died from interstitial hepatitis. However, in the last four years alone, eight fledglings have died - out of only 14 recorded since 1978. Of these eight birds, just one died accidentally; the remaining seven succumbed to disease. All seven ultimately died from aspergillosis, with two cases involving contributing infections (avian pox in one bird and respiratory parasitosis *Cyathostoma americana* in another).

Fortunately, 2025 marked an improvement: only six birds died (3.1% of the captive population), a figure below the average of 3.7% (1978-2025). Moreover, the average age at death rose to 23.0 years, exceeding the overall mean of 19.6 years (see graphic below).



**Figure 2 - Number of dead Bearded Vultures and average age of death in the EEP European Endangered Species Programme since 1978.**  
 Numero dei decessi ed età media dei gipeti morti nell'ambito dell'European Endangered Species Programme (EEP) in corso dal 1978.

## New diseases

In 2025, the EEP suffered on two new diseases: a respiratory parasitosis and circovirus infection.

In the first case, infection was attributed to the nematode *Cyathostoma* spp. In May, a three-month-old nestling at RFZ developed respiratory distress and was treated empirically for suspected aspergillosis. The bird died three days later, and necropsy revealed a heavy *Cyathostoma* spp. infestation that had caused chronic granulomatous inflammation of the air sacs and lungs. This represents the first documented case in 50 years of captive breeding in which a Bearded Vulture succumbed to parasitosis.

Following this finding, the entire captive population along with most other bird species housed at the recovery centre was screened. Seven additional Bearded Vultures tested positive for *Cyathostoma* spp., including two juveniles that had already been transferred to release sites. Four juveniles underwent treatment with ivermectin, which proved effective and produced no observable adverse effects; this constituted the first recorded use of antiparasitic therapy in the species. The remaining three immature birds, which showed no clinical signs, were not treated and tested negative after approximately six weeks. Notably, no adult birds tested positive.

A one-year study, led by the Parasitology Laboratory at Vienna Zoo, is currently underway to investigate the parasite's biology, assess the efficacy of antiparasitic treatment, and develop appropriate containment protocols. In the meantime, species identification has confirmed the parasite as *Cyathostoma americana*.

In the case of the circovirus, it was suspected by a nestling released in Bulgaria that exhibited sudden and pronounced feather loss. The individual was immediately transferred to the Green Balkans Wildlife Rehabilitation Centre, where biological samples were collected and subsequently analysed at the University of Zagreb Laboratory. Molecular diagnostics confirmed the presence of circovirus, consistent with previous detections in several Griffon Vultures recovered on the island of Cres (Croatia).

A second nestling released in Bulgaria died from acute croupous pneumonia and bacterial necrotic hepatitis. During post-mortem examination, circovirus was detected in a dystrophic feather. Viral genome sequencing revealed a high nucleotide similarity (99.6%) to a circovirus previously isolated from a Red Goshawk in Australia in 2021.

These findings introduce considerable uncertainty, as circovirus infection has not been previously reported in vultures. It remains unclear whether the pathogenesis and clinical progression in this taxon correspond to those described in other avian species affected by PBF (Psittacine Beak and Feather Disease), highlighting the need for further investigation.

## RIASSUNTO



## Il programma EEP per il Gipeto: risultati conseguiti nel periodo 2022-2025

Dal 1978, 741 giovani gipeti sono nati nel programma internazionale di allevamento in cattività, 443 dei quali sono stati rilasciati nell'ambito dei progetti di reintroduzione. Inizialmente questo programma è nato come base per il progetto di reintroduzione del gipeto nelle Alpi (LFZG 832/78; WWF 1567/78). Grazie ai risultati positivi ottenuti nell'ambito dell'EEP, è stato possibile ampliare gli obiettivi iniziali, avviando diversi progetti di reintroduzione in diversi paesi europei (Spagna, Francia e Bulgaria) con l'obiettivo di costituire una meta-popolazione europea di gipeti, creando un flusso genico tra le popolazioni autoctone isolate esistenti in Europa (nei Pirenei, in Corsica e a Creta) e con le popolazioni del Nord Africa e dell'Asia.

Una delle chiavi di questo successo è stata la creazione di ulteriori Centri di Riproduzione Specializzati (Centro de Cría Guadalupe nel 1996 e l'Unità di riproduzione del Gipeto presso il Centro di Recupero di Vallcalent nel 2005), poiché il tasso di riproduzione medio nei tre grandi Centri di Riproduzione Specializzati (SBC) è il doppio di quello degli altri Centri di Riproduzione aderenti al Programma EEP (rispettivamente 0,96 giovani/coppie riproduttive e 0,43 giovani/coppie riproduttive; 2004-2025).

Questa differenza e l'aumento del potenziale riproduttivo all'interno dell'EEP negli ultimi anni si riflettono chiaramente nel periodo 2022-2025. In soli quattro anni sono stati allevati 130 uccelli (il 17,5% del numero totale di pulcini allevati all'interno dell'EEP), consentendo il rilascio di 76 nidiacei (il 17,1% di tutti i nidiacei rilasciati). Anche il programma di riproduzione ha beneficiato di questi risultati positivi, passando da 172 uccelli nel 2022 a 195 nel 2025. Ci sono voluti 50 anni di riproduzione in cattività per raggiungere l'obiettivo prefissato molto tempo fa, quando il programma è iniziato nel 1978 che, allora constava di soli 25 uccelli in cattività ovvero una popolazione in cattività di 200 uccelli. Questi risultati sono stati conseguiti principalmente grazie agli eccellenti risultati ottenuti nel 2023 e nel 2024 (Tabella 1). Durante questo periodo, la differenza di produttività tra i Centri di Riproduzione Specializzati (SBC, Specialized Breeding Centers) e i Centri di riproduzione (BC, Breeding Centers) è stata inferiore al solito. Dei 130 giovani nati, 73 provenivano da SBC, che contava 79 coppie riproduttive (successo riproduttivo 0,92), mentre i restanti 57 giovani erano nati da 100 coppie allevate negli altri Centri di Riproduzione/zoo (BC), con un successo riproduttivo di 0,57. Questo divario inferiore al previsto è stato in gran parte dovuto a una riproduzione insolitamente bassa a Guadalupe e al Richard Faust Zentrum (RFZ) durante la stagione 2025, con SBC che ha ottenuto un successo riproduttivo di solo 0,55, leggermente inferiore al tasso di BC di 0,57.

D'altra parte, il successo riproduttivo presso i BC è migliorato, con una media di 0,57 giovani per coppia riproduttiva negli ultimi quattro anni. Questo miglioramento è in gran parte attribuibile al supporto diretto del coordinatore dell'EEP, che ha consigliato gli zoo con coppie riproduttive inesperte sulla gestione quotidiana del nido e sull'alimentazione supplementare in base allo sviluppo dei pulcini durante le prime settimane di vita. In questo periodo di quattro anni, 26 dei 28 pulcini assistiti direttamente dal coordinatore sono sopravvissuti, rappresentando il 45,6% di tutti i pulcini prodotti nei BC (n = 57).

Negli ultimi quattro anni, l'EEP ha registrato il più alto numero di morti dall'inizio del programma: 39 uccelli, pari al 19,2% di tutti i decessi registrati (n = 203). L'anno con le perdite maggiori è stato il 2022, quando sono morti 15 uccelli (l'8,7% della popolazione in cattività). Particolarmente degno di nota è il calo dell'età media al momento della morte tra il 2022 e il 2024, che è passata da 11,4 a 16,2 anni, ben al di sotto della media di 19,6 anni (1978-2025). Questo calo è in gran parte attribuibile a un insolito aumento della mortalità dei giovani, un fenomeno raramente osservato durante i primi decenni del programma (Figura 1).

Nel 2025, l'EEP ha registrato due nuove malattie: una parassitosi respiratoria e un'infezione da circovirus. Nel primo caso, l'infezione è stata attribuita al nematode *Cyathostoma* spp. A maggio, un nidiaceo di tre mesi presso il RFZ ha sviluppato difficoltà respiratorie ed è stato trattato empiricamente per sospetta aspergillosi.

L'uccello è morto tre giorni dopo per una grave infestazione da *Cyathostoma* spp. che aveva causato un'infiammazione granulomatosa cronica degli alveoli e dei polmoni.

Questo rappresenta per i gipeti allevati il primo caso documentato in 50 anni. A seguito di questa scoperta, l'intera popolazione in cattività, insieme alla maggior parte delle altre specie di uccelli ospitate nel Centro di recupero, è stata sottoposta a screening.

Altri sette gipeti (nessun adulto) sono risultati positivi al *Cyathostoma* spp., inclusi due giovani che erano già stati trasferiti nei siti di rilascio. Quattro giovani complessivamente sono stati sottoposti a trattamento con ivermectina, che si è dimostrato efficace e non ha prodotto effetti avversi osservabili; questo ha costituito il primo utilizzo documentato di terapia antiparassitaria nella specie.

È attualmente in corso uno studio nel Laboratorio di Parassitologia dello Zoo di Vienna, che ha confermato il parassita come *Cyathostoma americana*, per indagare la biologia del parassita, valutare l'efficacia del trattamento antiparassitario e sviluppare protocolli di contenimento appropriati.

Si sospetta che l'origine del circo virus derivi da un nidiaceo rilasciato in Bulgaria che ha presentato un'improvvisa e ampia perdita di penne. L'individuo è stato immediatamente trasferito al Centro di Riabilitazione della Fauna Selvatica gestito da Green Balkans, dove sono stati raccolti i campioni biologici, successivamente analizzati dal Laboratorio dell'Università di Zagabria. La diagnostica molecolare ha confermato la presenza del circovirus, come già individuato in precedenti analisi su campioni biologici di Grifone provenienti dall'isola di Cherso (Croazia).

Un secondo nidiaceo rilasciato in Bulgaria è invece morto di polmonite cruposa acuta ed epatite batterica necrotica. Durante l'esame autoptico, il circovirus è stato rilevato anche in questo caso.

Questi risultati introducono notevoli incertezze, poiché l'infezione da circovirus non è stata precedentemente segnalata negli avvoltoi. Non è ancora chiaro se la patogenesi e la progressione clinica in questo taxon corrispondano a quelle descritte in altre specie aviarie affette da PBF (Malattia del Becco e delle Penne), evidenziando la necessità di ulteriori indagini.



**Figure 3 - The release of a marked juvenile with rings and GPS in France.**  
Un giovane inanellato e dotato di dispositivo GPS il giorno del suo rilascio in Francia.



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A substantial amount of information is obtained from the genetic monitoring of Bearded Vultures. A blood sample is collected from each released bird. In the field, the collection of feathers, feather sheaths and eggshells is undertaken in the vicinity of the breeding cliff following the conclusion of the breeding season, or alternatively within the nest during the process of chick marking. Furthermore, feathers that are found in a random manner, such as from visitors at release sites and samples collected from dead or recaptured individuals, serve to supplement the dataset. The analysis of all samples is conducted using 24 microsatellites. The primary objective of this study is to identify breeding birds, collect the genotype of their offspring, and detect migrants. Further, it can also be utilised for a multitude of valuable analyses, including genetic diversity, natal dispersal distances, pair composition, individual inbreeding coefficient, and individual breeding success. The utilisation of this data is analogous to that of data originating from other individual marking methods, such as the ring marking method. This is due to the continuous genetic monitoring over many years and the fact that individuals are frequently detected more than once and the data can then be used for analyses, such as survival analysis (Schaub *et al.*, 2024).

Between the collection of the feathers and the final results, it can take up to 2 years, which is due to Cites documentation, shipping, pooling samples for the laboratory and second run of the analysis. Therefore, the here presented results are incomplete for the 2024 and 2025 season.

### Summary known individuals

In total 853 Bearded Vultures fledged in the Alps between 1986 and 2025 (589 wild-hatched, 264 released). Of these 422 individuals are known by their genetic fingerprint (221 wild-hatched, 201 released). In total, this is 49% of the population (38% wild-hatched, 76% released birds). As comparison 7% (41 individuals) of the wild-hatched birds and 100% of the released birds are marked with rings, in total 242 birds (36%). These numbers show that genetic monitoring is very important for identifying individuals, as more individuals are known genetically than by rings.

### Pedigree

The monitoring of breeding pairs and their offspring not only gives us information about pair changes and composition, but we can also reconstruct a pedigree (Figure 1). This pedigree starts with the founder birds of the captive breeding, shows the released birds and includes the wild hatched individuals with known parentage. The pedigree now spans 6 generations, although the 6<sup>th</sup> generation includes currently only three individuals. The longevity and overlapping generation of the Bearded Vulture are responsible that almost 50 years after the start of the project there are only 6 generations and that some lines cross from one generation to the next.

### Age difference between the partners

Considering the overlapping generations, it is interesting to investigate pair composition in more detail. One aspect is the age of the birds. The youngest genetically confirmed successfully breeding birds were 5 years old, that means their chick hatched in the 6<sup>th</sup> calendar year of the parent. In most cases (171 of 296) of breeding attempts where we know both parents, the birds were the same age or had one- or two-years difference. In the other 125 breeding attempts there was a bigger age difference between in the birds. In 43 events, the male was older than the female and in 82 breeding attempts, the female was older than the male (Table 1 and Figure 2).

**Table 1 - Lists the details about the different pairings observed in the Alpine Bearded Vulture.** Dettagli sui diversi abbinamenti in relazione alla loro età ed esito riproduttivo nei componenti delle coppie di Gipeto sulle Alpi.

Age difference pair Differenza di età nella coppia	Successful Con successo	Unsuccessful Senza successo	Total Totale
Similar age/Età simile	109 (64%)	62 (36%)	171
Female younger than male/ Femmina più giovane del maschio	27 (62%)	16 (37%)	43
Female older than male/ Femmina più vecchia del maschio	49 (60%)	33 (40%)	82

## Genetic Monitoring of Bearded Vultures: update 2025

In Table 2 we list the most extreme pairings of Bearded Vultures in the Alps. It is noteworthy, that Veronika, Retia and Ambo have been paired up in another breeding site before with same or similar aged partners.

**Table 2 - List of the 5 most extreme pairings regarding age difference.**  
Elenco dei 5 abbinamenti più estremi per quanto riguarda la differenza di età.

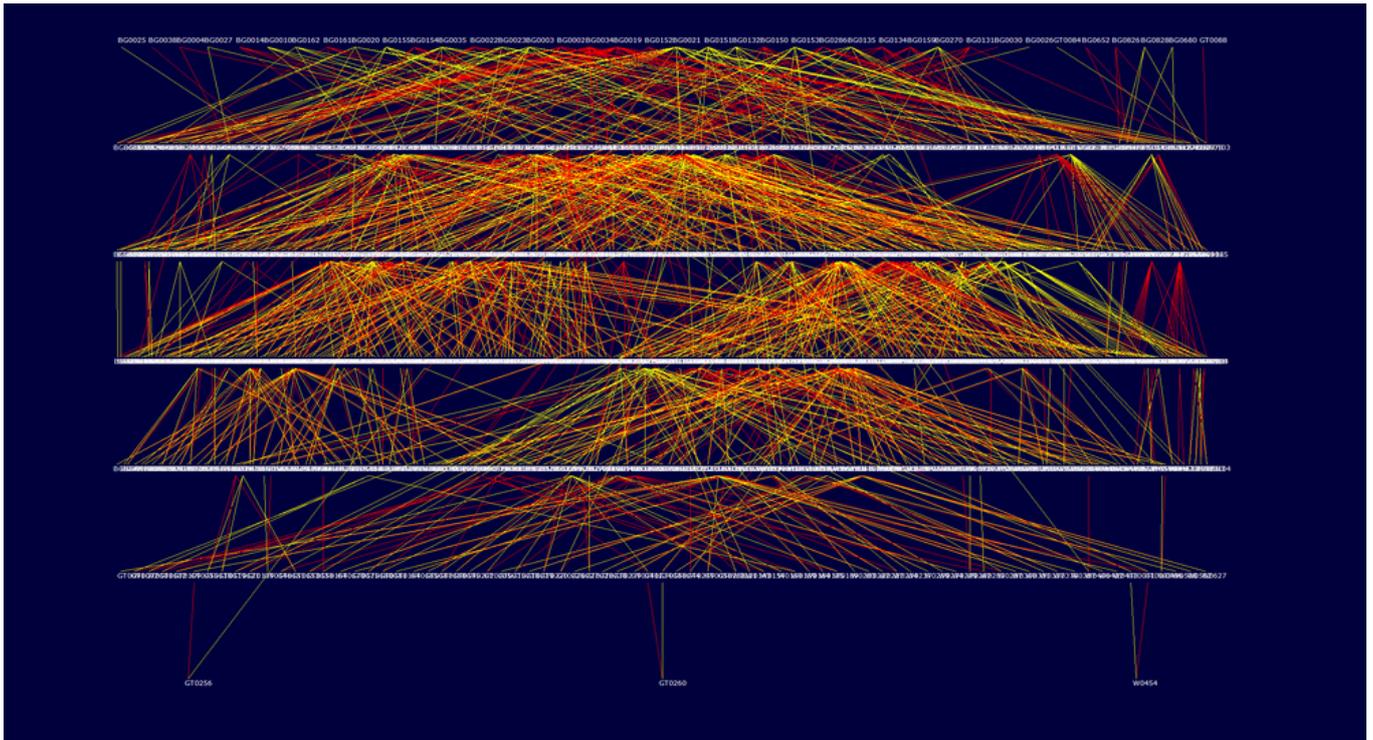
Female Femmina	Male Maschio	Age difference Differenza di età	Breeding in Nidificante a	Minimum numbers of years paired N° minimo di anni insieme	Number of chicks raised N° di pulcini allevati	Breeding success Successo riproduttivo
Jausier (BG0413)	Republic 3 (BG0166)	11	Val d'Isere (FRA)	10	6	60
Veronika (BG0321)	Gypsy (W0209)	18	Ardosieres (FRA)	1	1	100
Ambo (BG0392)	Fortuna (BG0843)	13	Heiligenblut (AUT)	5	3	60
Marie- Paradise (BG0095)	Phenix Alp Action (W0001)	10	Peisey- Nancroix (FRA)	1	1	100
Retia (BG0357)	Ingenius (BG0621)	10	Buffalora (CHE)	8	6	75

There is no information that one or the other combination of age difference between the partners influences breeding success and the observed difference is not significant. However, when pairing birds in the captive breeding program, in some cases older females are paired with juvenile males. Although juveniles are usually dominant over adult birds, they are not aggressive. Pairing aggressive older birds with juveniles reduces aggression compared with pairing two adults. Additionally, it was observed that if the female is not ready to breed and mate, this can cause behavioural issues in the male. In nature, birds would be able to deter and even select another partner and breeding site in these circumstances which is not possible in the captive environment (personal communication Alex Llopis Dell, EEP coordinator).

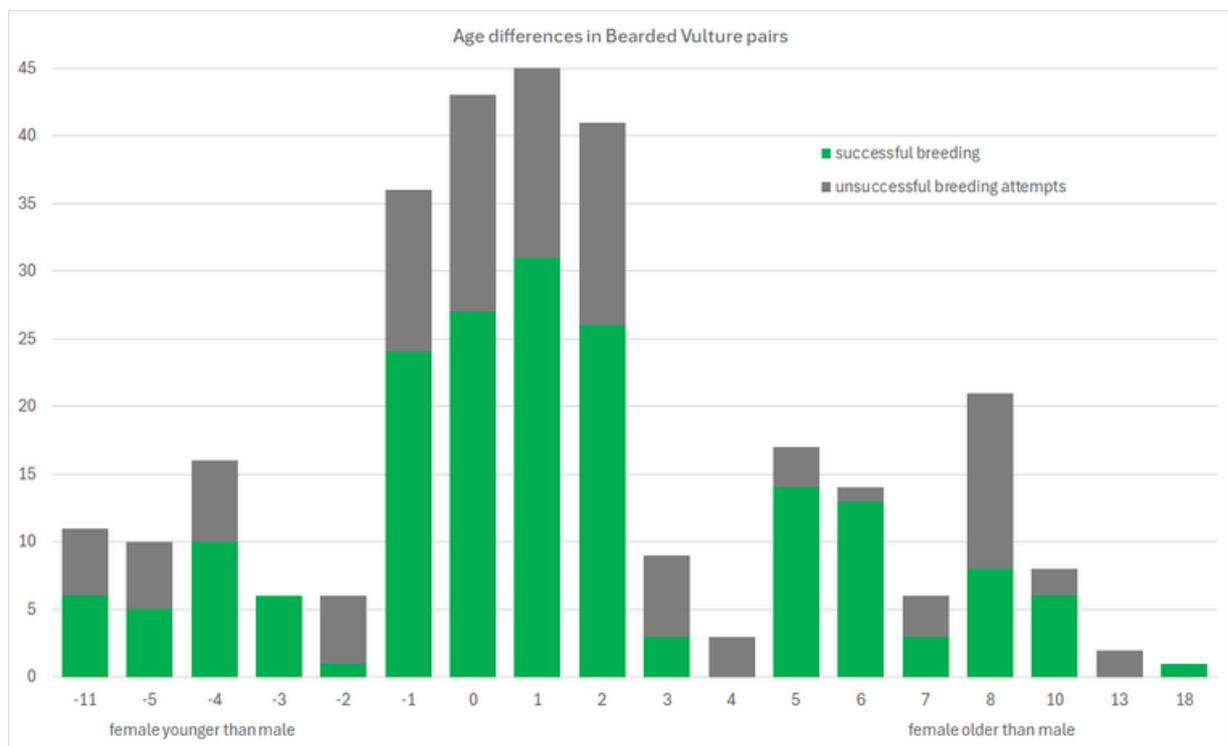
### Outlook

The individual genetic monitoring approach, which has been utilised for nearly three decades, constitutes the foundation for both present and future research. As the population increases, the process of assigning parents to unknown individuals becomes increasingly challenging. It is evident that the proportion of unknown individuals, attributable to inadequate sampling or analysis, poses a significant challenge in the identification of parents.

Furthermore, the resolution of the 24 microsatellites currently in use is, in certain cases, inadequate for distinguishing between close relatives. Consequently, to enhance comprehension of selection processes and the consequences of inbreeding, recent whole genome methods are being utilised for the analysis of existing samples. The development of a new marker set to increase the resolution for parentage analysis will also be enabled by this process. Nevertheless, it is imperative to collect samples from all breeding pairs to ensure the individuals are identified.



**Figure 1 - Pedigree of all captive, released and wild-hatched birds. The current pedigree spans 6 generations. The topmost birds are the founder birds and generation 0.** Pedigree di tutti gli uccelli in cattività, liberati e nati in natura. Il pedigree attuale si estende su 6 generazioni. Gli uccelli più in alto sono gli uccelli fondatori e la generazione 0.



**Figure 2 - Distribution of age difference of breeding Bearded Vultures in the Alps. Negative values indicate that the female is younger than the male, positive values indicate that the female is older than the male.** Distribuzione della differenza di età dei gipeti nidificanti sulle Alpi. I valori negativi indicano che la femmina è più giovane del maschio, mentre i valori positivi indicano che la femmina è più anziana del maschio.

## RIASSUNTO

### Monitoraggio genetico dei gipeti: aggiornamento 2025



Dal monitoraggio genetico dei gipeti si ottiene una notevole quantità di informazioni. Da ogni esemplare rilasciato viene prelevato un campione di sangue. Sul campo, la raccolta di penne, guaine e astucci di crescita, gusci d'uovo viene effettuata in prossimità delle pareti di nidificazione al termine della stagione riproduttiva, o in alternativa all'interno del nido durante la marcatura dei pulcini. Inoltre, penne rinvenute in modo casuale, ad esempio da visitatori nei siti di rilascio e campioni raccolti da individui morti o ricatturati, servono a integrare il set di dati. L'analisi di tutti i campioni viene condotta utilizzando 24 microsatelliti. L'obiettivo principale di questo studio è identificare gli uccelli nidificanti, raccogliere il genotipo della loro prole e individuare il genotipo dei soggetti erratici.

Inoltre, può essere utilizzato per una moltitudine di analisi preziose, tra cui diversità genetica, distanze di dispersione natale, composizione delle coppie, coefficiente di consanguineità individuale (*inbreeding*) e successo riproduttivo individuale.

L'utilizzo di questi dati è analogo a quello dei dati provenienti da altri metodi di marcatura individuale, come il metodo dell'inanellamento scientifico. Ciò è dovuto alla continuità con cui è portato avanti il monitoraggio genetico nell'arco di molti anni e al fatto che gli individui vengono spesso rilevati più di una volta; i dati possono quindi essere utilizzati per analisi, come l'analisi di sopravvivenza (Schaub *et al.*, 2024).

Tra la raccolta delle piume e i risultati finali, possono trascorrere fino a 2 anni, a causa della laboriosa documentazione Cites, della spedizione, del raggruppamento dei campioni per il laboratorio e della seconda sessione di analisi. Pertanto, i risultati qui presentati sono incompleti per le stagioni 2024 e 2025.

#### Riepilogo degli individui noti

In totale, 853 gipeti si sono involati sulle Alpi tra il 1986 e il 2025 (589 nati in natura, 264 rilasciati). Di questi, 422 individui sono noti tramite la loro impronta genetica (221 nati in natura, 201 rilasciati). In totale, si tratta del 49% della popolazione (38% nati in natura, 76% rilasciati). A titolo di confronto, il 7% (41 individui) degli uccelli nati in natura e il 100% degli uccelli rilasciati sono marcati con anelli, per un totale di 242 uccelli (36%). Questi numeri dimostrano che il monitoraggio genetico è molto importante per l'identificazione degli individui, poiché sono più numerosi gli individui conosciuti geneticamente che tramite anelli.

#### Pedigree

Il monitoraggio delle coppie riproduttive e dei loro giovani involati non solo fornisce informazioni sulle variazioni e sulla composizione delle coppie, ma consente anche di ricostruire un pedigree (Figura 2). Questo pedigree inizia dagli uccelli fondatori della riproduzione in cattività, mostra gli uccelli liberati e include gli individui nati in natura con parentela nota. Il pedigree riguarda ora 6 generazioni, sebbene la sesta generazione comprenda attualmente solo tre individui. La longevità e la sovrapposizione delle generazioni del Gipeto sono i fattori responsabili del fatto che, quasi 50 anni dopo l'inizio del progetto, ci siano solo 6 generazioni e che alcune linee genetiche si incrocino da una generazione all'altra.

#### Differenza di età tra i partner

Considerando la sovrapposizione delle generazioni, è interessante analizzare più in dettaglio la composizione delle coppie. Un aspetto riguarda l'età degli uccelli. Gli uccelli più giovani che si sono riprodotti con successo, geneticamente confermati, avevano 5 anni, il che significa che il loro pulcino è nato nel sesto calendario di vita del genitore. Nella maggior parte dei casi (171 su 296) di tentativi di riproduzione in cui conosciamo l'identità e l'età di entrambi i genitori, gli uccelli avevano la stessa età o uno o due anni di differenza. Negli altri 125 tentativi di riproduzione si è riscontrata una differenza di età maggiore tra gli uccelli. In 43 casi, il maschio era più anziano della femmina e in 82 tentativi di riproduzione, la femmina era più anziana del maschio (Figura 3 e Tabella 1).

In Tabella 1 si elencano gli abbinamenti più estremi nelle coppie di Gipeto sulle Alpi per quanto riguarda la differenza di età. È interessante notare che Veronika, Retia e Ambo hanno precedentemente costituito una coppia in un altro sito riproduttivo con partner di età uguale o simile.

Non ci sono informazioni che una o l'altra combinazione di differenza di età tra i partner influenzi il successo riproduttivo e la differenza osservata non è significativa. Tuttavia, quando si accoppiano uccelli nel programma di riproduzione in cattività, in alcuni casi le femmine più anziane vengono abbinate con maschi giovani.

**Figure 3 - Genetic identification could be achieved by DNA extraction from the sheaths of growing feathers and testaceous membrane of eggs.** L'identificazione genetica può essere ottenuta tramite l'estrazione di DNA dalle guaine delle penne in crescita e dalla membrana testacea delle uova.





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<sup>1</sup>Provincia di Sondrio, <sup>2</sup>Ente di gestione delle Aree protette delle Alpi Cozie, <sup>3</sup>Ente di gestione delle Aree protette delle Alpi Marittime, <sup>4</sup>Provincia autonoma di Bolzano, <sup>5</sup>Ente di gestione delle Aree protette dell'Ossola, <sup>6</sup>Parco Nazionale del Gran Paradiso, <sup>7</sup>Regione autonoma Valle d'Aosta, <sup>8</sup>Unione Montana del Pinerolese, <sup>9</sup>Ente di gestione delle Aree protette della Val Sesia and <sup>10</sup>Parco Nazionale dello Stelvio

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The Italian Bearded Vulture population has significantly grown in recent years. An increase of 41% was observed during the four-year period, from 2022 to 2025, with the number of known pairs rising from 22 to 31 with a maximum of 20 fledglings recorded in 2025 (see Table 1).

The Italian population continues to grow, although it is still settled in two large areas: 1) the central-eastern Alps (represented by the Stelvio NP and the provinces of Sondrio and Bolzano), and 2) the northwestern Alps, centered in the Gran Paradiso National Park, Aosta Valley and the province of Turin.

Both sites have taken advantage from past releases, either within their own area (e.g. Val Martello in Stelvio NP in South Tyrol) or in their proximity (Parc Naziunal Svizzer in Switzerland and Haute-Savoie in France). Encouraging signs come from the Maritime Alps in the province of Cuneo (the first Italian release site) and the province of Trento.

The most urgent issues to be addressed are lead poisoning resulting from the use of toxic ammunition in hunting, as emerged from an ongoing eco-toxicological study that analysed 281 large birds of prey from the Italian Alps and Apennines, including 153 Griffon Vultures, 114 Golden Eagles, 11 Bearded Vultures, and 3 Cinereous Vultures. Italian Alps present a particularly severe pattern of contamination, with percentages of clinical and subclinical exposure, in at least one tissue, of 67% in the Golden Eagle and Griffon Vulture, 50% in the Cinereous Vulture and 36.4% in the Bearded Vulture (Bassi, 2025; Pesaro *et al.*, 2025).

The evidence of the pervasiveness of lead in the food chain has been proven from the early life stages for the first time in the Bearded Vulture eggs with a maximum value of 0.8 mg/kg that might be indicative of maternally transmitted lead during oogenesis, including the embryos (Bassi, 2025). Other important widespread threats are electrocution and collision with electrical wires and ski aerial cables, the impact of the photographers approaching breeding sites and attracting individuals by illegal feeding (eg. Stelvio Pass) and the increasing use of rodenticide also in mountainous human settlements.

Finally, this national review highlighted the need to reinforce the current network investing more resources in field monitoring to fill the gaps especially outside the protected areas.

## Monitored breeding ranges

In Italy, the monitoring is mostly realized within four Alpine regions where breeding pairs settled: Aosta Valley, Piedmont, Lombardy and Trentino-South Tyrol. In this large area the monitoring activities are coordinated by Autonomous Region of Aosta Valley and Gran Paradiso National Park (Aosta Valley and Piedmont), Maritime and Cottian Alps regional Parks (Piedmont), Stelvio National Park and Autonomous Province of Trento and Bolzano (Lombardy and Trentino-South Tyrol) and Province of Sondrio (Lombardy). Veneto and Friuli Venezia Giulia regions (Eastern Alps) are the unique Italian areas where the species still not breeding and the occurrence of floaters is absent or scarce.

## Cuneo Province, Lanzo Valleys, and Verbano-Cusio-Ossola (SW and NW Alps)

Since 2022, a slight increase in territorial pairs has been observed in the Piedmont region monitored by the Maritime Alps Nature Park. In addition to the historical pairs ("Usseglio" in Lanzo Valleys and "Maira" in Maritime Alps), a new pair "Balme" settled in 2025 in Lanzo Valleys.

The "Usseglio" pair has successfully bred three out of four times (failing only in 2023), with the fledging of the juveniles Eolo-W0490 (2022), Aries-W0608 (2024), and Charun-W0698 (2025). The "Maira" pair has successfully fledged three juveniles in the last three years (in chronological order: Ali-W0525, Paco Mauro-W0605, and Soffio-W0697).

The "Usseglio" pair composed of Italia 150-BG0660 (male released in 2011 in the Maritime Alps) and a wild-born female (Bellacò), while "Maira" pair by Roman-BG0854 (male released in 2015 in Maritime Alps equipped with a still functioning GPS) and a wild-born female.

"Balme" pair, composed of an adult and a subadult (4 cy), were observed frequenting the nest in spring 2025.

Finally, many Bearded Vultures (mostly floaters) have been recorded in the remaining areas of the Province of Cuneo, Valsesia, and Verbano-Cusio-Ossola.



### Susa, Chisone, Germanasca, and Pellice Valleys (NW Alps)

Between 2022 and 2025, two new resident pairs settled in the Cottian Alps and in Pellice.

Both pairs bred in 2025, but without success: in one case, the eggs were abandoned, while in the other ("Chevre" pair), the juvenile was found dead after an early fledging.

Attention was paid to assess the impact of human activities, such as heliskiing, to protect nesting areas. Several outreach activities were also carried out to raise public awareness.

### Gran Paradiso National Park (NW Alps)

**Piedmont side** - In the Orco Valley, two new pairs bred in 2025. The first pair "Ceresole" (Figure 1), already known at the end of 2023, consists of an adult female equipped with a GPS (Gemapi, W0196, born in 2016) and an imperfect adult ("Bacù" - without genetic identity) whose nest was discovered in November 2024. In December 2024, the "Noasca" pair (formed by "Bucantino" and "Lasagna" - both without genetic identity) was spotted carrying branches to the nest discovered in early January 2025. The juveniles from "Ceresole" (Chapilot Flaffy) and "Noasca" (Tajarin) fledged between June 29<sup>th</sup> and July 1<sup>st</sup> and July 30<sup>th</sup> respectively. The juvenile from "Ceresole" pair initially landed in urban areas on at least two occasions but no longer displayed such behavior.

**Aosta valley side** - The pairs in Valsavarenche and Cogne do not appear to have changed partners in recent years, unlike the polygynous trio of Rhêmes.

In 2022, the chick of Rhêmes valley (born around March 29) died around April 22. The chick was cared mainly by the male and one of the two females (Sallanches - BG420 born in 2005).

In late 2022, the three adults were frequenting the Rhêmes Valley. In January 2023, an adult was seen carrying wool, but none of the adults were observed in known nests. In February 2023, all the observations regarded only single birds. These observations seem to correspond with what was reported by Laura and Paolo Fasce who confirmed nesting in a site located at 2700 m asl, used only in 2023 (Fasce & Fasce 2024).

In 2024, the female Sallanches has not been observed with the other two adults and the remaining pair successfully bred in one of the known nests.

In 2025, all three pairs followed by Gran Paradiso NP staff fledged a juvenile: Camanda ("Cogne" pair, around June 16), Buena Vista (Rhêmes pair, in the second half of June) and a third juvenile from "Chamoussiere" pair (July 5-11).

Finally, during the breeding season, ice climbing is prohibited in the "Cogne" nesting site.



**Figure 1** - "Ceresole" pair on a traditional roosting place in Gran Paradiso NP. La coppia "Ceresole" su un posatoio tradizionale nel versante piemontese del Parco Nazionale del Gran Paradiso.



### Autonomous Region of Aosta Valley (NW Alps)

In the area under the jurisdiction of the Autonomous Region of Valle d'Aosta, outside the borders of Gran Paradiso NP, 6 pairs were known (2022-2025): Valdigne, Gran San Bernardo, Bionaz, Valtournenche, Gressoney and Rhemes which is monitored by the Gran Paradiso staff.

"Valdigne" pair successfully bred only in 2023, failing in 2022, 2024, and 2025. In Gran San Bernardo area, a new pair settled: a chick fledged in 2024 (failure in 2025). "Bionaz" nest was last used in 2022 (IBM data), but it has not been possible to monitor it regularly in recent years. To integrate the limited information available for "Bionaz" pair, Laura and Paolo Fasce (2024 and *in verbis*) report the breeding repeatedly failed from 2018 to 2025.

The same Authors report a nesting event in Valtournenche in 2025 (a pair consisting of an adult male and a female born in 2020, both unidentified genetically), with fledging after July 7. This pair has never been archived in the IBM database by the Autonomous Region of Valle d'Aosta, although the presence of a pair of Bearded Vultures between Valpelline and Valtournenche is known (Chioso *pers. comm.*).

The pair "Gressoney" was composed of a unknown male and Ewolina, female released in 2015 and equipped with a GPS device (the last fix was from an unreachable area in 2024).

Finally, Laura and Paolo Fasce (2024) report the occurrence of a further pair (named "Territory N. 6" by the Authors, never included in the IBM database), where breeding failed in 2019, 2020, and 2021; in 2022 and 2023, only a single adult was present. In 2024, the territory was unoccupied.

### Stelvio National Park (Central-Eastern Alps)

In recent years, new pairs have settled in the Stelvio National Park, and in 2024, the "Ofenpass" pair, historically breeding in Switzerland, successfully fledged the juvenile Jenny-Ofenpass in Italy for the first time.

The occurrence of adult Bearded Vultures in the Trentino area has now become constant, first with the "Pejo-Rabbi" pair, which never bred and likely disappeared by 2023, then with the "Rabbi" pair, which fledged the bird Marco-Rabbi, the first Bearded Vulture born in Trentino after the extinction. The pair also fledged a juvenile in 2025 (Anila-Rabbi, on July 4).

In the South Tyrol sector of the park, both pairs "Martello" and "Ortler" have always fledged a juvenile, from 2021 to 2025. In 2024, a new pair, "Laas" settled in Lasa valley but failed for two consecutive years.

The Lombardy sector of Stelvio NP has the highest density of breeding pairs, all located in the province of Sondrio. A new pair, "Bormio", settled in 2024 and successfully fledged in 2025 (Daphne-Bormio). The "Sondalo" pair, present but not breeding since 2016, regularly frequented a new nest in 2025.

The "Braulio" territory has been occupied by three individuals in the last two breeding seasons: in 2024, the female was observed mating with both males, but breeding failed, likely in the first few days after hatching, for unknown reasons. In 2025, the trio fledged the juvenile Dryas-Braulio. The "Livigno" pair has always fledged a bird, despite genetic analysis suggesting a possible change in at least one of the two adults. The "Zebrù" pair has always fledged a bird except in 2024 without egg-laying.

To protect the nesting site of the "Livigno" pair, ice climbing has been banned since 2015. To protect the nesting site of the "Sondalo" pair, an official request has been submitted to reduce overflights by helicopters. Furthermore, the use of lead-free ammunition during deer culling activities is mandatory throughout the whole National Park. From 2013 to November 2025, with a maximum of 740 cullers (usually local hunters), 6,333 deer were hit using lead-free bullet, as follows: South Tyrol 4,352 deer and 350-550 cullers (from 2013 to 2024), Lombardy around 1,649 deer and 100 cullers involved (from 2012 to 2024), and Trento 332 deer and around 90 cullers involved (2023 and 2024).

South Tyrol: Venosta and Passiria Valleys (Central and Central-Eastern Alps) - The monitoring area extends on the left side of the Vinschgau Valley - the Ötztal Alps (Ötztal) - and in Passeier Valley. Four pairs settled in the area: "Pfosental" (established in 2010), "Planol/Matsch" (2012), "Resia" (2021) and "Passeier" (2023).

There are signs of a new pair forming in Vinschgau Valley (2025) named "Naturns/Naturno", not included in Table 1. The causes of breeding failures for "Resia" (2023 and 2024) and "Planol/Mazia" pairs (2024, post-hatching) are still unclear and only speculative. Regarding the "Resia" pair, many interactions with local pairs of Golden Eagle and Common Raven may have played a role. In fall 2016, Klaus Bliem recovered 5 droppings from "Planol" nest, one of which severely lead contaminated (mean 4.7 mg/kg; median 1.3, max 18.1 mg/kg, Bassi and ERSAF-Stelvio National Park data).



### Sondrio Province (Central Alps)

In the province of Sondrio currently settled eight pairs, representing all the resident pairs in Lombardy. Of these, three are located outside the Stelvio National Park: “Foscagno” pair (discovered in 2011), “Sondrio” pair (2020), and “Chiavenna” pair (2023). “Foscagno” pair did not breed in 2022, was not monitored in 2023, and successfully fledged a juvenile in 2024 (Giovanni) and 2025 (Silvana). The “Sondrio” pair fledged two juveniles in 2023 (Alfonso) and 2024 (Tiziana), but failed in March 2022 and 2025, as well as in 2021. “Chiavenna” pair always failed from 2023 to 2025 (Figure 2).

The reasons of these failures remain unknown but could be linked to the limited food availability, disturbance by local photographers (for the Sondrio pair only) and the elevated risk of saturnism and lead accumulation from hunting ammunition in food web which can negatively affect not only the survival of adults but also that of embryos and chicks. In confirmation of this hypothesis, it should be noted that in the period 2013-2023, in the Chiavenna Valley and in the municipalities within “Sondrio” home-range, lead levels were analysed in 8 carcasses (7 Golden Eagles and 1 Griffon Vulture). In 75% of these (6 out of 8), lead levels were above the physiological threshold (Table 2).

Furthermore, it is particularly alarming the value of 0.8 mg/kg of lead found in a Bearded Vulture eggshell laid in Chiavenna valley in 2023: in that nest, a Golden Eagle had laid an egg in previous years (showing even higher lead values of 3.2 mg/kg in the eggshell), that might be indicative of maternally transmitted lead during oogenesis to the embryo (Data: Bassi and Province of Sondrio).



**Figure 2** - “Chiavenna” pair close to the nesting site. La coppia “Chiavenna” vicina al sito riproduttivo.

### Mortality events

The details on the Italian mortality cases between 2022 and 2025 are reported below.

Maritime Park - On May 4 (2023), close to the “Maira” nest an adult female died for rodenticide intoxication and showed high lead concentrations in the brain (0.19 mg/kg, reported as subclinical exposure - data from Bassi/IZSLER).

Susa, Chisone, Germanasca, and Pellice Valleys (NW Alps) - The juvenile of “Chevre” pair was found dead under the nest after prematurely leaving it with a fractured sternum and several hemorrhagic areas. Necropsy and toxicological investigations have been initiated.



Aosta Valley - In February 2024, a young Bearded Vulture (1-2 years old) was found dead in the municipality of Valpelline because of the collision with a power line. A tissue sample was sent to the University of Zurich laboratory for genetic analysis.

Stelvio National Park - In May 2023, Ortler, a breeding female of the Italian-Swiss pair "Ofenpass" since 2013, was recovered alive after a severe electrocution against the cables of a medium-voltage power line (owned by A2a Company), which caused the death a few months later despite veterinary care. Analysis carried out to assess lead contamination of tissues from hunting revealed that the bone, liver, and kidney had physiological lead concentrations, but the blood level of 0.6 mg/kg (Data ERSAF-Stelvio NP) was indicative of clinical exposure, which might be contributed to the cause of death. Unfortunately, the brain was not analyzed.

On June 21, 2024, the remains of an immature/subadult Bearded Vulture of unknown sex were recovered in Viso Valley (Ponte di Legno, Province of Brescia). The only bone fragment recovered and analyzed by the CNR-IRSA Brugherio (Data Bassi and Laura Marziali) did not reveal any worrying lead levels. A Golden Eagle feather was also identified near the Bearded Vulture's feathers, which may have been related to the death (due to an aerial fight) or may have landed later to feed on the Bearded Vulture's carcass. At the end of April 2025, an adult male, not yet genetically identified, was found dead under the ski cables in Santa Caterina Valfurva. The lead levels analyzed in the various tissues were physiological in this case (Data IZSLER).

**Table 1 - Key breeding parameters for the Bearded Vulture population in Italy (trios of Val di Rhêmes 2010-2023 and Val Braulio 2024-2025 are included).** Principali parametri riproduttivi della popolazione di Gipeto italiana (inclusi il trio della Val di Rhêmes 2010-2023 e della Val Braulio 2024-2025)

Italy/Italia	2022	2023	2024	2025
N known pairs/N coppie note	22	24	28	31
N breeding pairs/N coppie riproduttive	16	14,5	20	28
Breeding success (N juv/breeding pairs)/ Successo riproduttivo (N giovani/coppie riproduttive)	0,69	0,72	0,7	0,71
Productivity (N juv/known pairs)/ Produttività (N giovani/coppie note)	0,5	0,44	0,5	0,65
N laying pairs/N coppie con deposizione	16	14-15*	20	28
N hatchlings/N schiuse	15	12-13*	15	23
N fledged juveniles/N giovani involati	11	10-11*	14	20
N failed reproductions/N riproduzioni fallite	5	5	6	8
N released birds/N uccelli rilasciati	0	0	0	0
N dead birds/N uccelli morti	1	2	2	2
N injured birds/N uccelli feriti	0	0	0	0

\*Range is due to differences between data stored in the IBM database and data coming from literature (Fasce & Fasce in Roux Poignant, 2024).

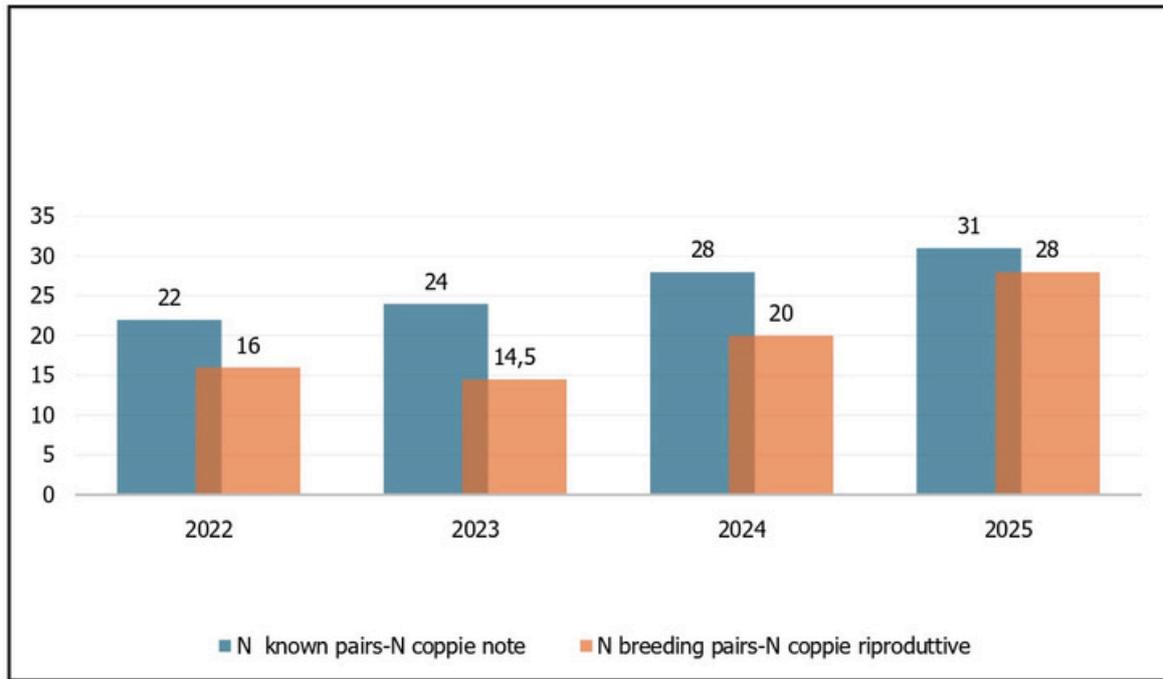


**Table 2 - Lead levels in 8 carcasses of large birds of prey from core-areas frequented by Bearded Vulture pairs called “Sondrio” and “Chiavenna” (Central Italian Alps). The risk of being contaminated by lead from hunting bullets is exceptionally high. Red: Acute and chronic (lethal) lead poisoning; Yellow: Subclinical exposure; Blue: Physiological values but incomplete analysis.**

Livelli di piombo in 8 carcasse di grandi rapaci provenienti dalle core-area frequentate dai gipeti delle coppie “Sondrio” e “Chiavenna” (Alpi centrali). Il rischio di essere contaminati dal piombo dei proiettili usati nella caccia è eccezionalmente alto. Rosso: saturnismo acuto e cronico (letale); Giallo: esposizione subclinica; Blu: valori fisiologici ma analisi incomplete (Data/Dati E. Bassi, Sondrio Province and ERSAF-Parco Nazionale Stelvio).

Species Specie	Locality Località	Year Anno	Bone Osso	Liver Fegato	Kidney Rene	Brain Cervello	Blood* Sangue	Cause of mortality Causa di morte
<i>Gyps fulvus</i>	Campodolcino	2023	10,4	0,91		0,11	0,27	Subclinic exposure, lung infection Esposizione subclinica, infezione polmonare
<i>Aquila chrysaetos</i>	Campodolcino	2023	34,9					Saturnism Saturnismo
<i>Aquila chrysaetos</i>	Torre di S.M.	2023	48,5	12,5	7,7	1,1	2	Saturnism Saturnismo
<i>Aquila chrysaetos</i>	Chiesa in V.	2022					0,01	Collision ski cables Collisione impianti di sci
<i>Aquila chrysaetos</i>	Villa di C.	2016	30,31	14,41	2,61			Saturnism Saturnismo
<i>Aquila chrysaetos</i>	San Giacomo F.	2016	101,55	3,06				Saturnism Saturnismo
<i>Aquila chrysaetos</i>	Madesimo	2014	11,6	0,68	0,26			Subclinic exposure, intraspecific aggression Esposizione subclinica, aggressione intraspecifica
<i>Aquila chrysaetos</i>	Chiesa in V.	2013	3,44	0,17	0,13			Intraspecific aggression Aggressione intraspecifica

\* clot samples included; \*campioni di coagulo inclusi.



**Figure 3 - Trend of the Italian Bearded Vulture population in Italy in 2022-2025.**

Andamento della popolazione di Gipeto in Italia dal 2022-2025.

#### References

- Bassi E. 2025. Abstract Book of the Symposium "Piombo, veleno senza frontiere - Lead, a borderless poison". International symposium on the effects of hunting lead ammunition on wild birds, environment and human health Gorizia (IT), 17-18<sup>th</sup> October 2025. Pages: 9-14. Download: <https://www.astorefvg.org/news/117/33/PIOMBO-VELENO-SENZA-FRONTIERE-LEAD-A-BORDERLESS-POISON.html>
- Fasce L. and Fasce P. in Giuseppe Roux Poignant (Curatela) 2024 - Avvoltoi Piemonte, Secondo Semestre, n. 9/2024. Ente di gestione delle aree protette Alpi Cozie. Pp: 78. Download: [https://www.parchialpicozie.it/media/model\\_files/Avvoltoi\\_Piemonte\\_n9\\_2sem2024.pdf](https://www.parchialpicozie.it/media/model_files/Avvoltoi_Piemonte_n9_2sem2024.pdf)
- Pesaro S., Perlin I., Piani B., Baggio A., Baldan G., Genero F., Sicuro L., Rossi G., Beraldo P. 2025. The heavy burden of Griffon Vulture in Friuli Venezia Giulia. Lead and its effects on their organism. Abstract Book of the Symposium "Piombo, veleno senza frontiere - Lead, a borderless poison". International symposium on the effects of hunting lead ammunition on wild birds, environment and human health Gorizia (IT), 17-18<sup>th</sup> October 2025. Page: 15. Download: <https://www.astorefvg.org/news/117/33/PIOMBO-VELENO-SENZA-FRONTIERE-LEAD-A-BORDERLESS-POISON.html>

#### RIASSUNTO

#### Sviluppo della popolazione di Gipeto in Italia (2022-2025)



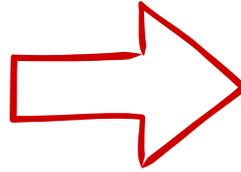
La popolazione italiana continua a crescere sebbene sia ancora concentrata su due grandi nuclei: quello delle Alpi centrali e centro orientali (rappresentato dallo Stelvio e dal territorio delle province di Sondrio e Bolzano) e quello delle Alpi nord occidentali che trova il proprio baricentro nel Parco Nazionale Gran Paradiso e nel restante territorio ricadente in Valle d'Aosta e in provincia di Torino. Entrambi i siti hanno beneficiato in passato delle azioni di rilascio o direttamente sul proprio territorio (Val Martello, Stelvio altoatesino) o nelle realtà più prossime oltre confine (Parc Nazional Svizzer in Engadina e Alta Savoia francese) dove si sono stabiliti i primi nuclei riproduttivi. Incoraggianti segnali provengono anche dalle Alpi Marittime in provincia di Cuneo (primo sito di rilascio italiano) e dalla provincia di Trento.

La popolazione italiana di Gipeto è cresciuta significativamente negli ultimi anni. Un incremento del 41% è stato osservato nel quadriennio 2022-2025, con un aumento del numero di coppie note, da 22 a 31, e un massimo di 20 giovani involati registrato nel 2025.

Le problematiche da affrontare in maniera più urgente sono il saturnismo derivante dall'uso di munizioni di piombo nella caccia, l'impatto delle linee elettriche, l'avvelenamento da anticoagulanti e il disturbo dei fotografi ai siti riproduttivi.



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in italiano



**Figure 4 - "Chamoussière" pair in the nest.** La coppia "Chamoussière" nel nido.

# Development of the Bearded Vulture population in French Alps (2022-2025)



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## Key figures and monitoring of territorial pairs

The population of Bearded Vultures in the French Alps continues to grow strongly. The number of breeding pairs has increased from 21 (2021) to 32 (2025). The number of fledglings has doubled in the last five years (9 in 2021 and 18 in 2025, Figure 1). Productivity remains high at 0.6 in 2025 (Table 1).

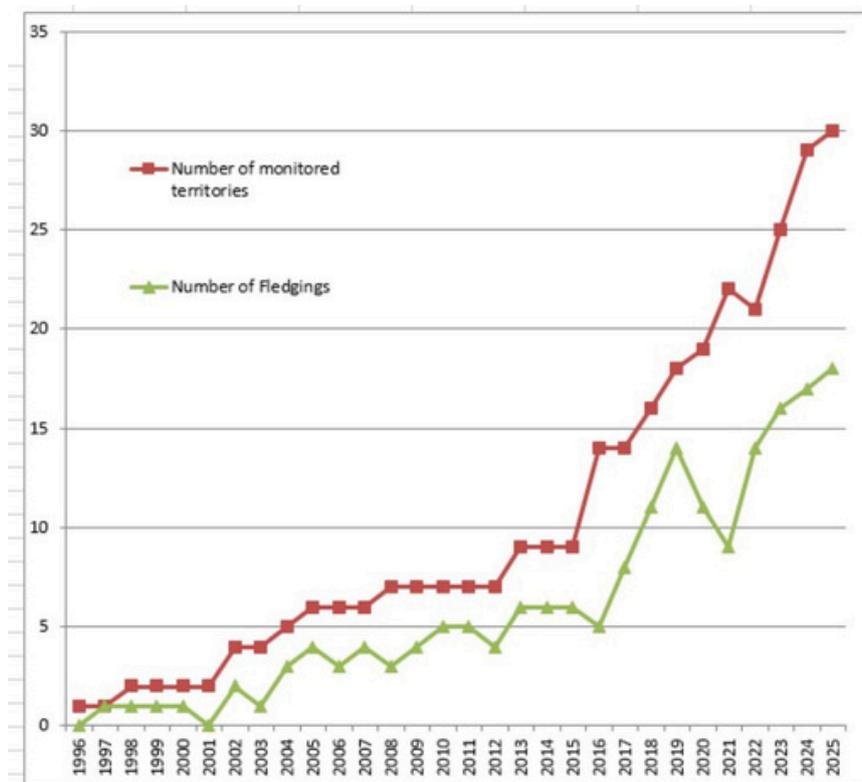
The spatial distribution of pairs in the French Alps has changed significantly in recent years. There has been an increase in density in the main areas of Savoie and Haute-Savoie, as well as an expansion into areas that are not frequently visited by the species. In fact, three new pairs have been observed in the Dauphiné region over the last two years.

## Reintroduction

In the French Alps, the releases are taking place in the Vercors Regional Nature Park and in the Baronnies in the Drôme department as part of the GYPACT programme (<https://gypact.fr/>) with the aim of creating a corridor for Bearded Vultures between Alps and Pyrenees via Massif Central.

The 2025 marks the eleventh year of Bearded Vulture releases in the Vercors Regional Nature Park, with a total of 23 released birds while the Association Vautours en Baronnies has released within the Baronnies range a total of 18 birds.

In 2025, 2 juveniles, Troubadour and Spirale, were released by the Vercors RNP (Figure 2).



**Figure 1 - Fledglings and resident pairs monitored in the French Alps.**

Numero di giovani involati e di coppie residenti monitorate sulle Alpi francesi.

© Asters CEN74

# Development of the Bearded Vulture population in French Alps (2022-2025)



**Table 1 - Key breeding parameters for the Bearded Vulture population in French Alps.**  
Principali parametri riproduttivi per la popolazione di Gipeto nelle Alpi francesi.

<b>French Alps/Alpi francesi (ASTERS, Mercantour, Vanoise, Envergures alpines, Vautours en Baronnies &amp; Vercors)</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
N known pairs/N coppie note	23	26	29	33
N breeding pairs/N coppie riproduttive	22	24	26	32
Breeding success (N juv/breeding pairs)/ Successo riproduttivo (N giovani/coppie riproduttive)	0,64	0,67	0,65	0,56
Productivity (N juv/known pairs)/ Produttività (N giovani/coppie note)	0,61	0,62	0,59	0,55
N laying pairs/N coppie con deposizione	21	23	26	29
N hatchlings/N schiuse	21	20	24	27
N fledged juveniles/N giovani involati	14	16	17	18
N failed reproductions/N riproduzioni fallite	7	4	7	9
N released birds/N uccelli rilasciati	2	3	4	2
N dead birds/N uccelli morti	0	3	2	2

### Equipment of wild born juveniles of Bearded Vulture

Since 2013, a programme has been underway in the French Alps to equip chicks in their nests with rings and GPS devices before their fledging.

Locating carcasses and/or injured individuals helps to improve our understanding of the causes of mortality. GPS data can also be used to study juvenile dispersal, particularly to compare the movements of reintroduced juveniles Bearded Vultures with those born in the wild.

Between 2013 and 2025, a total of 40 juveniles was ringed and fitted with GPS trackers before leaving the nest.

In 2025, teams from Vanoise National Park, Mercantour National Park, Vercors Regional Nature Park, Ecrins National Park, Envergures Alpines and Asters CEN 74 marked 5 juveniles with GPS devices. The birds were named Ubac Puy du Fou in the Dauphiné, Yalda in the Mercantour, Aravis2025 in the Aravis, Grapillon in Savoie, and Dom in the Vercors.



**You can track these individuals using the links below  
or you can scan/click the QR Code**

- <https://cartes.nature-haute-savoie.fr/index.php/view/map/?repository=qgis&project=Gypaete>
- <https://4vultures.org/our-work/monitoring/bearded-vulture-maps/>



**CLICK HERE**



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**CLICK HERE**

**Figure 2 - The juveniles Spirale and Troubadour released in Vercors Regional Nature Park.**

I giovani Spirale e Troubadour rilasciati nel PRN del Vercors.

Dropouts

Between 2021 and 2025, 9 individuals were found dead in the French Alps. Some of these deaths were caused by human activity, including the poisoning of an adult Bearded Vulture and its chick in Savoie in 2021. Moreover, a Bearded Vulture named Canteperdrix was shot in Drôme in 2022.

Thanks to its GPS tracker, Mison, a breeding female, was found dead in Isère, probably as a result of intraspecific fight with Altitude, the female where placed it in the pair. Both individuals were equipped with GPS devices.

In 2025, also the juvenile Dom, which was born in the wild (in Vercors), was found dead 24 days later with a broken wing, probably caused by a rockfall occurred during a violent storm.

Enhanced protection: ZSM serving Bearded Vultures

To protect the breeding sites from the human disturbance High Sensitivity Zones (ZSM) had been activating each year in early November (Figure 3).

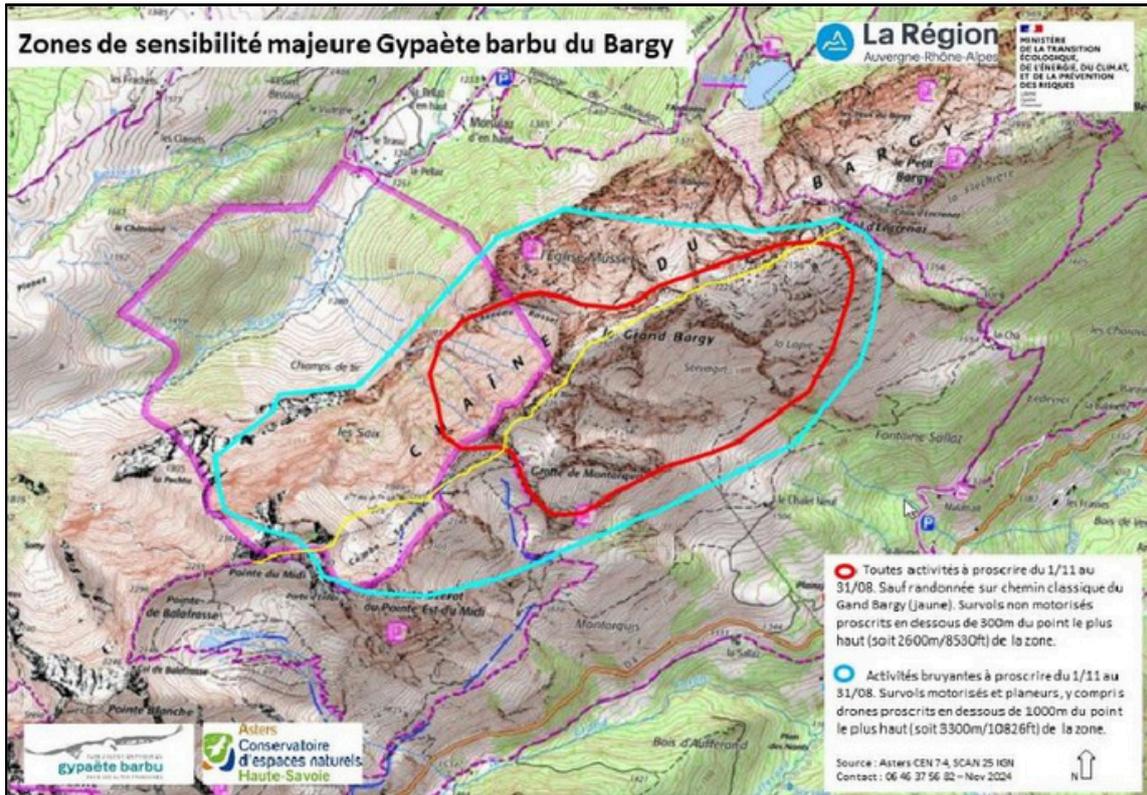
In November 2025, 41 ZSM were activated in the French Alps for 32 monitored pairs.

These areas help to limit disruptive activities such as motorised flying, skiing, hiking, fireworks, etc.

We have observed anthropogenic disturbances close to the nesting site causing reproductive failure in the "Source de la Tinée" pair, where the pair failed for three years afterwards.

Some municipalities, such as Bessans and Bonneval-sur-Arc in the Savoie department (73), have played an active role in protecting the local pair by rescheduling noisy public events.

While certain areas remain highly sensitive (e.g. "Andagne-Bessans"), other pairs, such as those in "Val d'Isère", "Pralognan" and "Avoriaz", show surprising tolerance to human activities close to their breeding sites. This confirms that not all situations are equivalent in terms of disturbance.



**Figure 3 - ZSM of Bargy (74).** The High Sensitivity Zones (ZSM) around the nests are activated each year in early November. La Zona di maggiore sensibilità per tutelare la coppia di Gipeto presso Bargy (74). Tutte le ZSM attorno ai nidi vengono attivate ogni anno a inizio novembre. ©Asters CEN 74

### Study of the visual capabilities of the Bearded Vulture. Solutions to reduce collisions

Potier Simon - Birdlife research 2025

This study is part of a proactive conservation approach in response to the increase in collisions between birds and human infrastructure, a phenomenon responsible for a massive decline in global birdlife. Its approach is based on sensory ecology: understanding how Bearded Vultures perceive their environment in order to better explain why they collide with cables, wind turbines and various other structures. By adopting an integrated scientific approach – combining anatomical measurements, behavioural analyses and molecular studies - the team seeks to identify the sensory limitations specific to the species, particularly in terms of visual acuity, contrast perception, visual field coverage and spectral sensitivity. The overall objective is to produce accurate, quantitative knowledge that can be directly used for conservation purposes.

The operational objectives of the study are to propose concrete solutions to reduce collisions between Bearded Vultures and man-made infrastructure. To this end, it aims to determine the optimal spacing of markers, their minimum size, the necessary contrast, and the relevance or otherwise of using certain colour ranges, including UV. These results should make it possible to improve the design of overhead cable visualisation devices with real detection capabilities for the species, and ultimately reduce the mortality of a bird of prey that is particularly vulnerable due to its slow population dynamics. The study thus serves as a scientific basis to guide engineers, natural area managers and decision-makers towards effective, realistic solutions adapted to the Bearded Vulture.

#### Sensory conclusion

- The Bearded Vulture sees details well, but has poor contrast vision and poor red vision.
- It perceives UV light, but this vision can be partially attenuated by oily droplets in the retina.



## Recommendations for the design of birdmarks on the cable

- Maximum spacing between two bird marks for detection at 50 m with a reaction time of 2 s and a speed of 25 m/s = 25.5 m
- Minimum bird mark size: At least 8 x 8 cm to be visible from 50 meters away by a Bearded Vulture. For bird marks with patterns (checker boards), the minimum recommended size is 24 x 24 cm (contrast and colour)
- Prioritise strong achromatic contrasts (black/white, yellow/black)
- Avoid red/orange tones that are difficult to perceive
- Use UV-reflective elements: highly visible to Bearded Vultures but invisible to the human eye
- Maximise internal contrasts (sharp patterns, defined edges)

## Recommendations for universal bird mark (multi-species)

- To cover mountain species: spacing  $\approx$  3.5 m; size  $\approx$  14 x 14 cm, or 42 x 42 cm for a 3 x 3 grid
- Adjust according to risks and local resident pairs (otherwise high cost and weight)

## Rescue of Balthazar

On 27 October 2025, an adult Bearded Vulture was rescued in the Municipality of Theyez in Haute-Savoie. After examination by a veterinarian, no injuries or fractures were found, only an old lead pellet embedded in its right leg, probably from a previous shooting. Kept in an aviary at the Asters breeding Centre for observation, it ate voraciously during the first few days, gaining weight from 4.8 kg to 6 kg in 11 days.

This ringed Bearded Vulture was born in captivity in 1988 in Wassenaar (NL) and was released into the wild the same year in the Bargy massif in Haute-Savoie. Balthazar BG99 (Figure 3) is the first Alpine Bearded Vulture successfully reproduced after the return of the species, coupled with the female Assignat in Bargy, with the birth of Phenix Alp action.

Balthazar was the breeding male of the pair, then became a trio genetically monitored, in southern Bargy until 2016, after which we lost the tracking and we thought it was dead. Surprisingly, it was still alive in 2025. He was released, equipped with a GPS device, on 6<sup>th</sup> November 2025 and finally caught, weakened, on 27<sup>th</sup> November 2025. Although it had no injuries, it had lost a lot of weight. Three weeks of GPS tracking showed us that it was not in a breeding unit and, more importantly, that it flew very little each day. It probably had difficulty flying for long periods and therefore feeding itself. This bird will therefore join the captive breeding network for Bearded Vultures.



**Figure 4 - Balthazar captured on 27th November, 2025. It was the first breeder in 1997 for the Alps after the extinction.** Il Gipeto Balthazar, recuperato il 27 novembre 2025, è il primo maschio riprodotto nel 1997 dopo l'estinzione della specie sull'arco alpino.



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Reintroduction in the southern French Massif Central continues, with releases taking place in the Grands Causses (in the "Gorges de la Jonte" in Lozère and in the "Gorges du Trévezel" in Aveyron).

From 2021 to 2025, Bearded Vultures have been released each year from 2 to 5. Among the 18 juveniles released during this period, 15 flew away successfully. Since 2020, the reintroduced birds have tended to stay within the Massif, frequently observed with other individuals of different age.

A first territorial pair of 2 males settled in the Jonte Gorges in 2018. A second territorial pair formed in 2023 and is attempting to breed in Lozère. A third pair may be in the process of pairing up. Intraspecific interactions, between reintroduced juveniles and sub-adults/adults have repeatedly proved problematic; the older individuals have been aggressive, causing difficulties for their younger congeners. In 2023, two juveniles unfortunately died because of contacts with an adult male, a few days (and weeks) after their first flight. For these reasons, a third release site is being created in the south of the Massif Central, away from areas usually frequented by territorial birds. This new hacking site should be operational in 2026.

During the last four years, 7 individuals reintroduced into the Grands Causses have unfortunately died:

- 2 juveniles died on the hacking site, a few days after their arrival (Parpaillou and Plumet). One of them was killed by a mustelid or a fox in the cave and the second died in the care Centre. Veterinary analyses determined that both birds suffered from hepatic steatosis contracted before their arrival;
- 1 immature individual died in June 2022 in the Netherlands after colliding with a wind turbine (Roc);
- 2 juveniles died because of intraspecies contacts (Salvage and Selblo) in 2023;
- one subadult male in its fourth year was found dead in January 2025 in Lozère, and the cause of death could not be confirmed (despite rapid recovery, the carcass had been partially consumed by scavengers). This was the male named Rei del Causse, who had moved across Europe (Germany, Poland);
- 1 juvenile died before taking flight in July 2025 (Univers). Veterinary analyses determined that this bird suffered from a chronic infectious or viral disease (additional analyses are underway to try to better determine the origin of this chronic disease).

Currently, 12 individuals are alive in the Grands Causses (4 adults over 6 years old, 5 subadults of 5 and 4 years, 1 immature in its 2<sup>nd</sup> year and 2 juveniles).

The sex ratio of this small core of Bearded Vultures still shows an imbalance among adults; the 4 adults are males and only 2 females in their 6<sup>th</sup> year are in the area.

However, prospects are encouraging, with the presence of some pairs and the possibilities of breeding in the coming years.

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## RIASSUNTO

### La popolazione francese di Gipeto sulle Alpi e nel Massiccio Centrale (2022-2025)



La popolazione di Gipeto sulle Alpi francesi continua a crescere fortemente. Il numero di coppie nidificanti è incrementato da 22 (2022) a 32 (2025). Il numero di giovani nidificanti è raddoppiato negli ultimi 4 anni (14 nel 2022 rispetto a 18 nel 2025) e la produttività rimane elevata, attorno allo 0,6 nel 2025. La densità è aumentata nelle aree principali (Savoia e Alta Savoia), in espansione nel Delfinato con 3 nuove coppie negli ultimi due anni. Un totale di 40 giovani è stato rilasciato tra il 2013 e il 2025, tutti inanellati e dotati di dispositivi GPS.

Tra il 2021 e il 2025, 9 individui sono stati recuperati privi di vita nelle Alpi francesi. Tra le cause antropiche si annovera l'avvelenamento di un adulto e del suo giovane in Savoia (2021), l'abbattimento di un soggetto (Canteperdrix) nella Drôme (2022) mentre per cause naturali è stata recuperata una femmina riproduttrice nell'Isère (Mison), probabilmente per competizione intraspecifica con Altitude, la femmina che l'ha sostituita nella coppia. Infine, nel 2025, il giovane Dom, rilasciato nel Vercors è morto prima di spiccare il volo, molto probabilmente ferito da una frana avvenuta durante una violenta tempesta.



Nel 2025 si sono ottenuti anche i risultati dello studio sulle capacità visive del Gipeto, a cura di Simon Potier, per comprendere come i Gipeti percepiscono l'ambiente, i cavi aerei, le turbine eoliche e le altre strutture contro le quali possono collidere, identificando i limiti sensoriali della specie in termini di acuità visiva, percezione del contrasto, copertura del campo visivo e sensibilità spettrale per acquisire conoscenze utilizzabili a fini di conservazione.

Il 27 ottobre 2025, il Gipeto adulto Balthazar BG99 è stato recuperato in Alta Savoia. Nato in cattività a Wassenar (NL) era stato rilasciato nel 1988 in Alta Savoia. Fu il primo Gipeto alpino a riprodursi con successo dopo l'estinzione nel 1997 a Bargy e, dal 2016, lo si riteneva morto.

Dopo le cure, è stato rimesso in libertà il 6 novembre 2025 ma, ormai indebolito, è stato ricatturato pochi giorni dopo (27 novembre). Il tracciamento GPS ha dimostrato che non si trovava nell'home-range di nessuna coppia residente e che volava molto poco ogni giorno. Questo adulto farà parte della rete di riproduzione in cattività per i gipeti.

Nel Massiccio Centrale, nel quadriennio 2022-2025, sono stati rilasciati 13 giovani e 5 individui sono morti. Tra le cause di morte principali si annoverano quelle naturali (uno ferito da un mustelide al sito di rilascio), 2 giovani per interazioni intraspecifiche nel 2023 e altri 2 per problemi di salute (steatosi in un caso e patologia infettiva nell'altro). Di interesse il caso dell'immaturo (Roc) morto nel giugno 2022 nei Paesi Bassi dopo una collisione con una turbina eolica e quello del maschio subadulto (Rei del Causse) morto nel 2025 in Lozère per cause ignote che aveva attraversato negli anni precedenti la Germania e la Polonia.

In prospettiva riproduttiva, si registrano i primi segnali incoraggianti con la formazione di due coppie e di una possibile terza. La prima, insediatasi nel 2018 nelle Gole della Jonte, è ancora formata da 2 maschi mentre la seconda, formata nel 2023, sta tentando di riprodursi in Lozère.

Le frequenti interazioni intraspecifiche, tra i giovani reintrodotti e le classi di età superiore (subadulta e adulta) stanno diventando particolarmente problematiche come si è evidenziato nel 2023, con la morte di 2 giovani, feriti da un adulto. Per questi motivi è stato predisposto un terzo sito di rilascio a sud del Massiccio Centrale.

**Table 2 - Key breeding parameters for the Bearded Vulture population in Massif Central.**

Principali parametri riproduttivi per la popolazione di Gipeto nel Massiccio Centrale.

Massif Central/Massiccio Centrale (LPO France site Grands Causses)	2022	2023	2024	2025
N known pairs/N coppie note	1	1	2	2
N breeding pairs/N coppie riproduttive	0	0	0	0
Breeding success (N juv/breeding pairs)/ Successo riproduttivo (N giovani/coppie riproduttive)	0	0	0	0
Productivity (N juv/known pairs)/ Produttività (N giovani/coppie note)	0	0	0	0
N laying pairs/N coppie con deposizione	0	0	0	0
N hatchlings/N schiuse	0	0	0	0
N fledged juveniles/N giovani involati	0	0	0	0
N failed reproductions/N riproduzioni fallite	0	0	0	0
N released birds/N uccelli rilasciati	2	4	4	3
N dead birds/N uccelli morti	1	2	0	2

# Bearded Vultures in Switzerland: encouraging development in the 4-year period from 2022 to 2025



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The Bearded Vulture population in Switzerland has grown significantly in recent years. An increase of 52% was observed during the four-year period from 2022 to 2025, with the number of breeding pairs rising from 25 to 38 (see Table 1). The total number of wild-fledged Bearded Vultures increased, by 82%, from 117 to 213 individuals. This positive development is due to a combination of favourable habitats and plentiful food resources supplied by healthy wild ungulate populations. Furthermore, a recent study demonstrated low mortality rates in the core area of the Alpine Arc (Schaub *et al.*, 2024). One factor contributing to the positive development is the reduced risk of lead poisoning, which results from an increasing voluntary abandonment of lead-containing ammunition and stronger regulations or bans in most Alpine cantons. In recent years, we have noticed an increase in disturbances at nesting sites, primarily caused by photographers approaching these sensitive spots too closely. As detecting and prosecuting such offences is often difficult, Pro Bartgeier is increasingly addressing this issue also through communication work to raise awareness and encourage social control among photographers. The actual development highlights the Swiss Alps' potential to support a stronghold of the Alpine Bearded Vulture population but also points out the responsibility to take all necessary actions to strengthen its conservation in our mountain area.

## The current situation in the monitoring areas of Switzerland

In Switzerland the monitoring activities are regionally coordinated: Grison, Ticino, Central and Eastern Switzerland, Bern and Southwestern Switzerland. Here we report details about each region, mainly about reproduction:

**Grison** - In the tri-border area of Italy, Austria and Switzerland a thriving subpopulation of Bearded Vultures has emerged following the release of 37 juveniles between 1991 and 2008 in the Swiss National Park and South Tyrol. Nearly half of the breeding pairs in this nucleus can be found in Grison and sum up to 20 breeding pairs. The highest density occurs around the Swiss National Park, the original release site, illustrating philopatry, as many pairs settled near their fledging place. New pairs have expanded outward from the core, first within the Engadine and its southern valleys, later reaching Bergün (2016), Tinizong (2020), Avers (2022), and the Hinterrhein Valley (2025). Meanwhile, density within Southern Grisons has also increased, with new pairs in Val Müstair (2022) and the Upper Engadine (2023). In the core area, each breeding pair now occupies about 55 km<sup>2</sup>, matching golden eagle densities. Abundant food and nesting sites have fostered such growth that competition is emerging, two pairs even skipped breeding in 2025. Over 80% of today's breeding birds in Grison are wild hatched and are descending from a few original founders yet showing high fitness and productivity. Since 2007, 141 chicks have fledged, averaging 0.74 fledglings per pair annually - nearly triple the productivity of golden eagles in the same region. Continued protection, nest monitoring, and disturbance prevention are vital. Encouragingly, the 2025 season set a record: 17 breeding pairs produced 16 fledglings.

**Ticino** - One breeding pair settled in autumn 2020 and the first chick successfully fledged in 2023. In 2024 the pair failed to raise a chick, but 2025 marked another successful year and one bird fledged. The biggest issue in this region is disturbance by photographers which even led the pair to abandon the nesting site temporarily.

**Central Switzerland** - At the two release sites Calfeisental and Melchsee-Frutt 30 birds have been released between 2010 and 2025. The goal of the releases is to increase the genetic diversity of the Alpine population and close the distribution gap between the eastern and western part of Switzerland. Meanwhile at least eight birds (38% of the sexually mature birds) are breeding in different Alpine regions. A major milestone was achieved in 2025, with the first breeding pair successfully raising a chick in the canton of St. Gallen, in the region of the release site.

**Bern** - One breeding pair settled in the region already in 2020 when the pair moved from a different valley around 10 km to the currently used breeding cliff. The pair is composed by two wild hatched birds originating from France. They have a 100% success rate in raising their chicks. However, the surroundings of the breeding cliffs are challenging for the juveniles and already two birds had to be rescued out of difficult situations. Both birds were released the following day, marked with rings and in 2025, W0719, Aiolos also with a GPS tag.

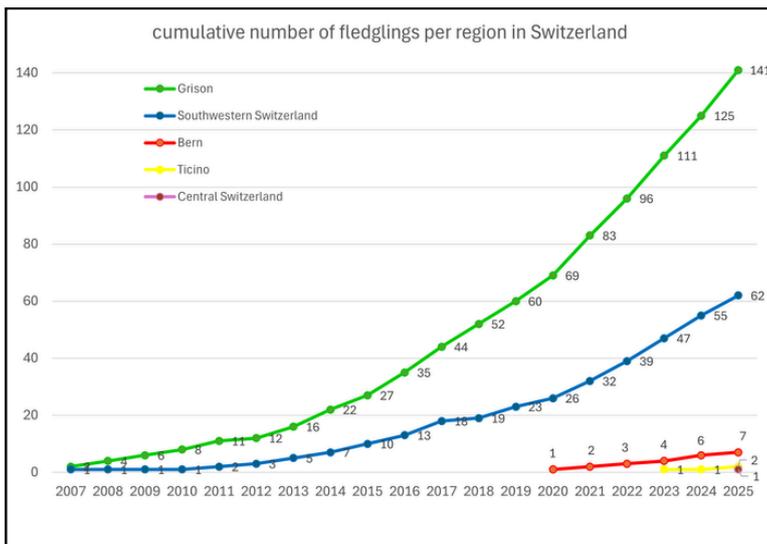
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**Southwestern Switzerland** - One of the most important methods for the individual monitoring and the surveillance of Bearded Vulture pairs is an individual photo dataset. Based on this method we revealed the regular disappearance of nesting individuals without any apparent cause. The only nesting individual whose cause of death has been identified in the last years is Elena (BG0613), who was struck by a helicopter in 2023. The male was already courting another female five days later and finally paired up with another female a few months later, with whom he is currently nesting.

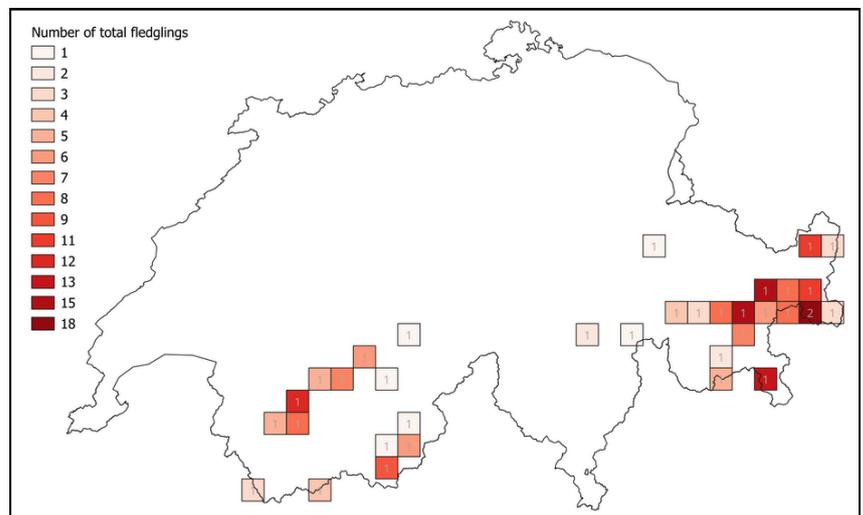
The pair in Stalden lost their male while feeding their young in 2024. The female appears to have finished raising the chick alone, then a male from 2021 came to replace the male that disappeared. They laid an egg in 2025, but it did not hatch. This is the second adult that this pair has lost since settling there at the end of 2023. We were also able to show that an established pair, that had built nests in the Val d'Anniviers is currently nesting in the Mattertal. They moved around 15 km distance, across another valley. Further, a new pair has replaced them in the Val d'Anniviers. These examples show the high dynamic and availability of unpaired birds in this area of Switzerland. However, it also raises questions about the reasons why birds disappear or move territory.

In the southwestern part of Switzerland, the airspace and land are heavily used, often causing conflicts. As in other areas, one of the biggest issues is the disturbance caused by photographers who get too close to the nest sites to take photos. Of the 12 pairs which at least nested once between 2022 and 2025, 8 have been approached too closely at least once during the nesting period (sometimes less than 100 m away), including at least 5 with the primary intention of taking pictures in the nest. These numbers show the extent of the problem.



**Figure 1 - Evolution of the different regions in Switzerland since 2007 when the first three chicks fledged in the wild. We show the cumulative number of fledglings. This illustrates how quickly the population in the east is growing. But also how in recent years, other areas started to host breeding pairs to contribute to the total population.** Evoluzione del numero di giovani involati in relazione alle diverse regioni della Svizzera a partire dal 2007, anno in cui i primi tre giovani selvatici si sono involati dopo l'estinzione. Si evidenzia il numero cumulativo dei giovani che dimostra la rapida crescita della popolazione svizzera nella parte orientale ma anche come, negli ultimi anni, altre aree abbiano iniziato a ospitare coppie riproduttive.

**Figure 2 - Distribution of the breeding pairs in Switzerland in 10x10 km squares of pairs which raised at least one fledgling between 2007 and 2025. In all but one square, only one breeding pair is observed, in one square two breeding pairs raised a total of 18 chicks.** Distribuzione delle coppie riproduttive in Svizzera che hanno allevato almeno un pulcino tra il 2007 e il 2025, suddivisa in quadrati di 10x10 km. In tutti i quadrati, tranne uno, si osserva una sola coppia riproduttiva; nell'unico quadrato in cui sono presenti due coppie riproduttive è stato allevato un totale di 18 pulli.





**Table 1 - Key breeding parameters for the Bearded Vulture population in Switzerland.**  
Principali parametri riproduttivi per la popolazione di Gipeto in Svizzera.

Switzerland/Svizzera	2022	2023	2024	2025
N known pairs/N coppie note	27	31	34	38
N breeding pairs /N coppie riproduttive	25	30	30	30
Breeding success (N juv/breeding pairs)/ Successo riproduttivo (N giovani/coppie riproduttive)	84	83	80	87
Productivity (N juv/known pairs)/ Produttività (N giovani/coppie note)	78	81	71	68
N laying pairs/N coppie con deposizione	25	30	30	30
N hatchlings/N schiusa	22	29	26	29
N fledged juveniles/N giovani involati	21	25	24	26
N failed reproductions/N riproduzioni fallite	4	5	6	4
N released birds/N uccelli rilasciati	0	2*	3	0
N dead birds/N uccelli morti	0	2	2	2
N injured birds/N uccelli feriti	1	1		2

\*One bird had to be recaptured after fledging due to misbehaviour.

\*Un individuo è stato ricatturato dopo l'involò a causa di disturbi comportamentali.

## References

- Lauper M. 2025. 19<sup>th</sup> International Bearded Vulture Observation Days - IOD 2024. Survey report, International Bearded Vulture Monitoring (IBM); ed. Vulture Conservation Foundation. pp 1-46.
- Schaub M., Loercher F., Hegglin D. & Arlettaz R. 2024. Demographic assessment of reintroduced bearded vultures in the Alps: Success in the core, challenges in the periphery. *Ecological Solutions and Evidence*, 5 (2), 1–13. <https://doi.org/10.1002/2688-8319.12347>
- Vignali S., Loercher F., Hegglin D., Arlettaz R. & Braunisch V. 2022. A predictive flight-altitude model for avoiding future conflicts between an emblematic raptor and wind energy development in the Swiss Alps. *Royal Society Open Science*, vol. 9, no. 2, Feb. 2022.



RIASSUNTO

Il Gipeto in Svizzera: lo sviluppo della popolazione nel quadriennio 2022-2025



La popolazione di Gipeto in Svizzera è cresciuta significativamente negli ultimi anni. Nel quadriennio 2022-2025 è stato osservato un aumento del 52%, con il numero di coppie riproduttive salito da 25 a 38 (Tabella 1). Il numero totale di gipeti involati in natura è aumentato dell'82%, passando da 117 a 213 individui. Questo andamento è dovuto alla combinazione favorevole di habitat idonei e dall'abbondanza di risorse alimentari fornite principalmente da popolazioni di ungulati selvatici in ottima salute. Inoltre, un recente studio ha dimostrato bassi tassi di mortalità nell'area centrale dell'Arco alpino (Schaub *et al.*, 2024).

Un fattore chiave che contribuisce a questo sviluppo positivo è il ridotto rischio di avvelenamento da piombo, derivante da un crescente abbandono volontario da parte dei cacciatori di munizioni contenenti piombo e dall'introduzione di normative e divieti più severi nella maggior parte dei cantoni alpini. Per contro, negli ultimi anni, si è registrato un aumento dei disturbi presso i siti di nidificazione, causato principalmente dall'avvicinamento eccessivo dei fotografi a questi luoghi sensibili. Poiché individuare e perseguire tali reati è spesso difficile, la Fondazione per il Gipeto (Stiftung Pro Bartgeier) sta affrontando sempre più questo problema anche attraverso attività di comunicazione per sensibilizzare e incoraggiare il controllo mutuale tra i fotografi. L'attuale sviluppo demografico evidenzia l'alto potenziale delle Alpi svizzere, considerate un baluardo della popolazione a livello alpino, ma sottolinea anche la responsabilità di adottare sul territorio montano tutte le misure necessarie per rafforzarne la conservazione.

Le attività di monitoraggio sono coordinate a livello regionale nei Grigioni, Ticino, Svizzera centrale e orientale, Berna e Svizzera sudoccidentale. Si presentano i dettagli relativi alla distribuzione delle coppie, alle minacce, ai principali parametri riproduttivi e di mortalità a livello regionale e nazionale.



**Figure 3 - A Bearded Vulture, fully adult and flying above the Swiss Alps. It could be one of the estimated 60 breeding birds currently living in Switzerland.** Un adulto di Gipeto in volo sulle Alpi svizzere. Potrebbe essere uno dei 60 individui stimati nidificanti attualmente in Svizzera.



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## Releases of Bearded Vultures in Austria

In the summer of 1986, four Bearded Vultures were released in the Krumltal. The first released bird was the male “Hans” on 11 June 1986. Between 1986 and 2018, a total of 63 individuals had been released in Austria. All releases took place within Hohe Tauern National Park. Release sites were in the National Park parts of Salzburg, Tyrol and Carinthia. A total of 39 Bearded Vultures were released in the Salzburg part, 33 of them were released in the Krumltal (Rauris) because the valley offered favourable conditions. Twelve birds were released in the Carinthian and twelve in the Tyrolean part.

## Monitoring Centres in Austria

Since all Bearded Vultures were released in the Hohe Tauern, it was logical to establish the first central office for Austrian Bearded Vulture monitoring in this region. Due to the increasing number of breeding pairs and sightings in western Austria, it became necessary from 2019 onwards to divide the alpine region of Austria into two monitoring areas. The first monitoring project in western Austria ran for 1,5 years from early 2021 to mid-2022. Since 2023, the State of Tyrol and the Tyrolean Nature Parks are responsible for Bearded Vulture monitoring in western Austria. While the Hohe Tauern monitoring centre covers the eastern monitoring area between the Radstädter Tauern in the east and the Zillertal Alps in the west, the western monitoring centre focuses on the area between the Zillertal Alps in the east and the Austrian Swiss border in the west.

## **Bearded Vultures in the Hohe Tauern**

### Population Development

Regarding the distribution in the Alps, the Hohe Tauern represent the easternmost occurrence of Bearded Vulture. Since the start of monitoring, no breeding activity has been recorded east of this region. It must be noted that the edges of a population typically support fewer individuals than the centre, which is reflected in fewer breeding pairs. Currently, six breeding pairs are established in the Hohe Tauern. According to current knowledge, these pairs consist mostly of individuals released in the Hohe Tauern.

To make precise statements about population trends, different approaches are required, including the life histories of individual birds and their behavioural interactions, which have significantly influenced population development in the region. Disturbance and threat factors - such as saturnism and other anthropogenic impacts - must also be considered, as these have prevented earlier pair formation and the associated breeding attempts.

### Breeding Activities in the Hohe Tauern (2022-2025)

A clear increase in the number of egg-laying events is evident during the period considered. Data show that in each breeding season at least five pairs laid eggs. Compared to previous years (2014-2021), when a maximum of three egg-laying events occurred per season, this represents a notable rise. The increase is partly due to newly formed breeding pairs that became reproductively active in 2022 and 2023.

Regarding breeding failures, an increase was also documented; monitoring detected a total of 11 breeding failures, representing a failure rate of 50%. Slightly more failures occurred before the expected hatching date than after hatching. Documented causes of failures between 2022 and 2025 include strong anthropogenic disturbance (ice climbing) and intraspecific competition with Golden Eagles. Whether lead contamination also played a role remains unresolved for the period, although it cannot be ruled out.

Between 2022 and 2025, eleven successful fledglings were documented in the Hohe Tauern. The productivity rate was 0,46 (compared to 0,53 for all of Austria, Table 1). In comparison, the period 2010-2021 showed a productivity rate of 0,22 -so the productivity has doubled in the current period. The breeding season 2022/2023 is currently the most successful recorded in the Hohe Tauern. The underlying reasons are diverse. Three fledglings were the first breeding successes of newly formed pairs. Among these was the first breeding success of the “Mallnitz” pair (female: Charlie, 2016; male: Felix2, 2014).



The first breeding success of the “Gschlößtal” pair (female: Glocknerlady, 2012; male: Pinzgarus, 2008) most likely resulted from a second clutch, as no chick was recorded at the expected hatching time in March. After a nearby rockfall, the valley was closed, which apparently benefitted the pair; in mid-May a two-month-old chick was discovered in the nest by chance.

The “Prägraten” pair - believed to consist of the male Lea (2015) and an as-yet unidentified female - also produced a chick in spring 2023. As this pair was formerly a trio, the dissolution of the trio may have had a positive effect on reproductive success.

While the “Katschberg” pair, with ten successful breeding attempts between 2014 and 2023, represents Austria's currently most productive breeding pair, the “Krumltal” pair is the oldest breeding pair in Austria, as it is assumed - based on current knowledge - to consist of the female Alexa, released in 1988, and the male Andreas Hofer, released in 1996. To date, the pair has successfully bred nine times. Moreover, the Bearded Vulture Alexa, at over 37 years of age, is considered the oldest breeding bird in the Alps.

### Influence of released birds in Bavaria on the Hohe Tauern

Since 2021, Bearded Vultures have been released in Berchtesgaden National Park to support the eastern Alpine population. Given the short distance between Berchtesgaden and the Hohe Tauern, sightings of marked birds from Bavaria in the Hohe Tauern since 2021 are not surprising. Their length of stay varies considerably: while some individuals visit only briefly, others spend weeks or even months in the region.

Resident territorial birds show a wide range of reactions to the migrating individuals, from tolerance to strong aggression. For example, the “Mallnitz” pair showed severe aggression towards the Bavarian bird BV Nepomuk (\*2023), chasing it violently from their territory.

Among the Bavarian birds, Recka has become particularly significant for the Hohe Tauern. This female, released in 2022, first flew into the region in August 2023. Telemetry data indicate that Recka has shown a strong preference for the Hohe Tauern since 2023. Since August 2025, she has been recorded almost exclusively within the territory of the “Gschlößtal” pair. Since that time, she was observed sitting in the nest and transporting nesting material; a mating attempt was documented in late October 2025. Notably, the previously established pair was last seen together in September 2024. For roughly one year thereafter, only a single adult bird was observed in the area, with sporadic sightings of a second adult in late summer 2025. Based on current observations, a partner change may have occurred, and Recka may be establishing permanently in the territory. More definitive conclusions require continued observations during the 2025/2026 breeding season.

In conclusion, only one individual released in Bavaria has so far shown a clear preference for the Hohe Tauern, with the potential to remain permanently. However, further releases make it likely that additional individuals from Bavaria will settle in the area.

## **Bearded Vultures in Western Austria**

### Population Development in Western Austria

While breeding activities in the Hohe Tauern have been documented since 2001, monitoring data show that the first breeding attempts in western Austria were recorded during the breeding season 2018/2019. Since 2019, the number of breeding pairs and associated breeding activities has steadily increased. Over six years (2019-2025), six breeding pairs were confirmed. In addition to these established pairs, several potential pairs have been observed whose behaviour suggests imminent or ongoing pair formation.

Breeding success in the Central Alps in recent years is considered the main driver of this rapid population growth. Most occupied territories are in North Tyrol between the Alpine main ridge and the Inn Valley. Documented breeding pairs have also established in the Northern Limestone Alps in recent years.

All confirmed breeding pairs to date are in North Tyrol. However, since 2024, observations suggest that additional pairs may exist in Vorarlberg, Austria's westernmost state; these are currently being investigated by the monitoring.

### Breeding Success in Western Austria

Nest monitoring from 2022-2025 shows a positive trend in breeding activities in western Austria. An increasing number of egg-laying events has been documented, mainly due to newly discovered breeding pairs. Because systematic monitoring in western Austria began only in 2023, it remains unclear which pairs may have been active in earlier years.



Between 2022 and 2025, twelve fledglings were recorded. A comparison of breeding success between the two monitoring regions (with twelve confirmed breeding pairs in total) shows that nearly the same number of fledglings was produced: eleven in the Hohe Tauern and twelve in western Austria. The productivity rate of North Tyrolean pairs is 0.5, slightly higher than in the Hohe Tauern.

However, far fewer breeding failures were recorded in western Austria (N=1) than in the Hohe Tauern (N=11). The reasons are not yet fully clear. It is plausible that the pairs are particularly well adapted to local conditions. In some cases, nests are in completely undisturbed areas, explaining the high breeding success. In other cases, nests are situated near heavily frequented ski resorts or major transport routes - both associated with high disturbance potential - yet still achieved breeding success in the period considered.

One of the six breeding pairs in Northern Tyrol is the "Ötztal" pair. Genetic analyses indicate that the pair represents a unique case among Austrian breeding pairs, as it is the first pair composed entirely of wild-hatched individuals. While the female (Humboldt-Albula) originated from Graubünden (CH), her partner (Paolino-Zeburu) was born in Stelvio National Park (IT). This pair provides evidence that western Austria is being recolonized by individuals dispersing from Switzerland and Italy.

### Outlook

Given recent developments, it is expected that additional breeding pairs will establish themselves in western Austria in the medium to long term. It is also assumed that the current gap between western Austria (Ötztal Alps) and the Hohe Tauern will eventually be filled, as suitable habitat exists within this area. Additional pair formation is also expected in the Hohe Tauern.

Current distribution patterns in Austria indicate that new pairs may establish not only along the Alpine main ridge but also in the Northern Limestone Alps. Consequently, the establishment of breeding pairs in the German Alps appears plausible.

### Current threat Factors

Ice climbing is increasingly popular in the Alps and poses a significant disturbance risk to breeding Bearded Vultures. In recent years, several breeding failures of two pairs have been attributed to ice-climbing activity in close distance to nests during the highly sensitive January-March period. Climbers preferentially use north-facing rock faces, where ice persists longest. While there is no disturbance between April and December, major disturbances occur precisely during the most critical months. Measures such as ranger patrols, warning signs, and cooperation with the Austrian Alpine Club have been implemented to protect breeding pairs.

Due to the increasing number of breeding pairs in western Austria (mainly Tyrol) and the high disturbance potential from ice climbing in the East Tyrolean section of the Hohe Tauern National Park, efforts were made to establish a legal basis for protecting breeding pairs. An amendment to the Tyrolean Nature Conservation Act now allows areas to be designated as species-protection zones (§25a TNatSchG) during breeding, nesting, and rearing periods. This enables large-scale closures of nest areas in North and East Tyrol to prevent disturbance, including climbing activities.

Lead poisoning resulting from the use of lead-based ammunition continues to pose a major threat to Bearded Vultures in Austria. Aside from the 2023 ban on lead shot in wetlands, Austria has no additional restrictions on the use of lead ammunition. A nationwide ban is essential for the protection of wildlife.

Wind energy projects in the Alps pose a major risk to Bearded Vultures. Plans for wind turbines have existed in the Austrian Alps for years. Collisions could severely and negatively affect the species' development in Austria, and the loss of breeding pairs would be especially detrimental in regions with low population densities.

In the context of wolf recolonisation, social media occasionally features hostility toward vulture species. Outdated and long-refuted accusations are still circulated, including calls - sometimes criminally relevant - for shooting or poisoning vultures. This represents a significant threat, particularly for the Hohe Tauern, which is not only core habitat for Bearded Vultures but also a preferred summering area for Cinereous and Griffon Vultures in the Eastern Alps.



**Table 1 - Key breeding parameters for the Bearded Vulture population in Austria.**  
Principali parametri riproduttivi per la popolazione di Gipeto in Austria.

Nationalpark Hohe Tauern and Tiroler Naturparke/ Parco Nazionale Alti Tauri e Parco Naturale del Tirolo	2022	2023	2024	2025
N known pairs/N coppie note	8	9	10	14
N breeding pairs/N coppie riproduttive	8	9	10	12
Breeding success (N juv/breeding pairs)/ Successo riproduttivo (N giovani/coppie riproduttive)	1	1,67	1,1	0,83
Productivity (N juv/known pairs)/ Produttività (N giovani/coppie note)	0,5	0,75	0,5	0,32
N laying pairs/N coppie con deposizione	7	9	10	9
N hatchlings/N schiuse	5	9	7	7
N fledged juveniles/N giovani involati	5	9	7	7
N failed reproductions/N riproduzioni fallite	3	1	4	4
N released birds/N uccelli rilasciati	0	0	0	0
N dead birds/N uccelli morti	0	0	0	0



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**Figure 1 - Adult Bearded Vulture resident in Gschlößtal.**  
Uno dei gipeti adulti della coppia residente in Gschlößtal.



## RIASSUNTO

### Sviluppo della popolazione di Gipeto in Austria (2022-2025)



Per quanto riguarda la distribuzione del Gipeto nelle Alpi, gli Alti Tauri rappresentano la zona più orientale di distribuzione, con sei coppie riproduttive costituite principalmente da individui rilasciati nella regione (63 rilasciati nel periodo 1986-2018).

Nel 2022-2025, negli Alti Tauri si è registrato un netto aumento del numero di deposizioni, almeno 5 per stagione riproduttiva: un aumento notevole rispetto agli anni precedenti (2014-2021), quando si erano verificate al massimo tre deposizioni a stagione. Al tempo stesso, anche i fallimenti riproduttivi sono lievemente aumentati per un totale di 11 fallimenti. Tra le cause documentate, nel 2022-2025, il forte disturbo dell'arrampicata su ghiaccio e la competizione intraspecifica con l'Aquila reale. Resta ancora non indagato l'effetto della contaminazione da piombo (che non può essere escluso) sulla mancata schiusa delle uova e la morte del pullo.

Nello stesso periodo, negli Alti Tauri, si sono involati 11 giovani con produttività dello 0,46 (cfr. 0,53 per tutta l'Austria, Tabella 1), raddoppiata rispetto al 2010-2021 (0,22). La coppia "Krumltal" rappresenta la coppia più anziana, presumibilmente composta dalla femmina Alexa, liberata nel 1988, e dal maschio Andreas Hofer, liberato nel 1996. Alexa, con i suoi oltre 37 anni, è considerato il Gipeto nidificante più anziano delle Alpi.

Sebbene le attività riproduttive negli Alti Tauri siano documentate dal 2001, i primi tentativi di riproduzione nell'Austria occidentale sono stati invece registrati nella stagione 2018/2019. Dal 2019 al 2025, il numero di coppie riproduttive in Austria occidentale è aumentato costantemente, con la conferma di 6 coppie nel Tirolo settentrionale e alcune coppie potenziali.

Il successo riproduttivo avuto sulle Alpi centrali europee degli ultimi anni è considerato il principale fattore chiave per la rapida crescita della popolazione occidentale austriaca nella quale, tra il 2022 e il 2025, si sono involati 12 giovani. Il confronto del successo riproduttivo tra le due regioni monitorate mostra, su un totale di dodici coppie nidificanti, che è stato prodotto quasi lo stesso numero di giovani involati: 11 negli Alti Tauri e 12 nell'Austria occidentale. Il tasso di produttività delle coppie dell'Austria occidentale (Tirolo settentrionale) è di 0,5, leggermente superiore a quello degli Alti Tauri anche perché in Austria occidentale sono stati registrati molti meno fallimenti rispetto agli Alti Tauri (1 vs 11). Una delle sei coppie nidificanti del Tirolo settentrionale è la coppia "Ötztal", interamente composta da individui selvatici nati rispettivamente nei Grigioni svizzeri (Humboldt-Albula, femmina) e nel settore lombardo del Parco Nazionale dello Stelvio (Paolino-Zebrù, maschio). Questa coppia suggerisce che l'Austria occidentale è in fase di ricolonizzazione anche da parte di individui provenienti da Svizzera e Italia.

Alla luce dei recenti sviluppi, si prevede che ulteriori coppie nidificanti si stabiliranno nell'Austria occidentale nel medio-lungo termine e che l'attuale divario tra l'Austria occidentale (Alpi Venoste) e gli Alti Tauri verrà colmato, poiché anche in quest'area esiste un habitat idoneo. In prospettiva, si prevede la formazione di ulteriori coppie negli Alti Tauri e nuove coppie potrebbero stabilirsi anche nelle Alpi tedesche.

Diversi fallimenti riproduttivi sono stati causati per due coppie di Gipeto dall'attività di arrampicata su ghiaccio presso i nidi, tra gennaio e marzo. Sono state così implementate speciali misure di sorveglianza e istituiti dei divieti di accesso alle pareti, in collaborazione con il Club Alpino Austriaco. Inoltre, è stata introdotta una modifica normativa per designare le aree dei nidi in periodo di riproduzione come zone di protezione delle specie. Ciò consente l'interdizione delle aree di nidificazione nel Tirolo settentrionale e orientale per impedire disturbi antropici di varia natura, comprese le attività di arrampicata.

L'avvelenamento da piombo derivante dall'uso di munizioni tossiche nell'attività venatoria continua a rappresentare una grave minaccia per i gipeti in Austria. A parte il divieto del 2023 sui pallini di piombo che riguarda le pertinenze delle sole zone umide, non esistono ulteriori restrizioni all'uso di munizioni al piombo in tutta l'Austria. Un divieto nazionale sarebbe dunque auspicabile poiché essenziale per la protezione del Gipeto, dell'avifauna e degli habitat naturali.

Anche i progetti legati a impianti eolici rappresentano un grave rischio per i gipeti perché potrebbero avere un impatto grave sull'andamento della specie con la perdita di preziose coppie riproduttive, specialmente nelle regioni con basse densità di popolazione.

Infine, nel contesto della ricolonizzazione del Lupo, i social media occasionalmente mostrano ostilità nei confronti degli avvoltoi. Circolano, infatti, accuse obsolete e da tempo confutate, tra cui voci - a volte penalmente rilevanti - che riportano di uccisioni e avvelenamenti volontari di avvoltoi da parte di ignoti. Ciò rappresenta una minaccia significativa, in particolare per gli Alti Tauri, non solo per i gipeti ma anche per l'Avvoltoio monaco e il Grifone.

# Five years of the Bearded Vulture project in Berchtesgaden National Park



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## Abstract

Since 2021, Landesbund für Vogel - und Naturschutz e.V. (LBV) and Berchtesgaden National Park (NP BGD) have collaborated on the reintroduction of the Bearded Vulture in the Bavarian Alps. Ten individuals have been released, nine of which are still alive. The birds exhibit high mobility, often returning to their release region. Notable events include the seemingly territorial behavior of Bavaria and the long-distance flight of Vinzenz to the North Sea. The project has led to a ban on lead-based ammunition in state forests and has achieved significant public awareness in the region and through digital platforms respectively. Scientific data collection supports academic research. The goal is to support the still small population of bearded vultures in the eastern Alps.

## Introduction

Since 2021, the LBV and Berchtesgaden National Park have been working together to reintroduce the bearded vulture to the Bavarian Alps. Previously rarely sighted, the species can now be observed regularly in Berchtesgaden and the Allgäu region. The project is based on international cooperation with breeding centers and zoos as part of the European Endangered Species Program (EEP) and the Vulture Conservation Foundation.

## Releases and behaviour

Ten Bearded Vultures have been released into the wild in the past five years, nine of which are still alive. The birds are highly mobile, flying up to several hundred kilometers a day, yet often returning to their release area and the surrounding mountain ranges. Various areas of residence have emerged: while two of the young birds show a strong tendency to favor western Alpine regions (Suisse, France), the Hohe Tauern National Park, the areas around the Swiss National Park and Stifserjoch, as well as the Allgäu and Lechtal Alps are particularly popular. There were also some advances into mountain habitats further east. Especially "Bavaria" showed signs of territorial behavior before her GPS transmitter failed. In March 2025, five young birds returned to the release area at the same time and explored potential territories together. A young bird hatched in the wild also remained in the region for months, indicating increasing connectivity between populations.

There were several minor rescue missions involving very young birds in precarious situations.

## Partial success on the lead issue

One significant success is the ban on lead-containing rifle ammunition in Bavarian state forests. The LBV is campaigning for a comprehensive switch to lead-free ammunition, as lead in carcasses poses a major threat to scavengers. Berchtesgaden National Park has been lead-free since 2014.

## Public interest

The project has had a major social impact: numerous media outlets reported on the reintroductions, especially in the early years. Live webcams, a blog, lectures, various environmental education features (e.g. information stand with around 8000 visitors per year) as well as an active online community have generated a high level of public engagement awareness. The birds' GPS data can be viewed on the LBV and NP websites, with a three-day delay to protect the animals.

## Comprehensive Monitoring and scientific data

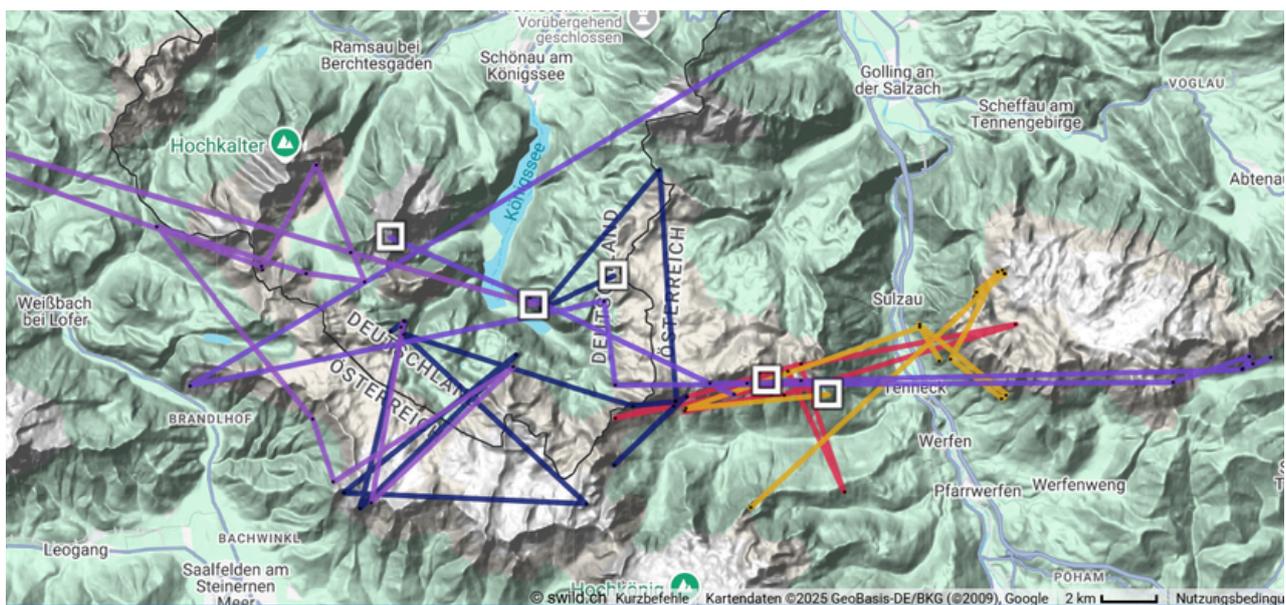
The project provides valuable behavioral biology data. A daily observation team documents flight behavior, food intake, and interactions among other things (from sunrise to sunset). This data helps to ensure the safety and optimal development of young birds. The data is already being used as a basis for academic work.

## Outlook

Two to three bearded vultures are to be released into the wild each year until at least 2030. It is expected that the first pairings and breeding attempts will be observed around this time. The aim is to support the still small eastern Alpine population with a view to establishing a self-sustaining population.



**Figure 1** - Since last year more and more of our previously released birds return to the release site and visit the juveniles. Here Nepomuk (2023, bottom right) is approached by Luisa (2025, above), while Generl (2025, left) is watching. Dall'anno scorso, un numero sempre maggiore di uccelli precedentemente rilasciati torna al sito di rilascio e visita i giovani. Qui Nepomuk (2023, in basso a destra) viene avvicinato da Luisa (2025, sopra), mentre Generl (2025, a sinistra) osserva.



**Figure 2** - In spring 2025, the overview map of transmitters showed a pleasing concentration in the Berchtesgaden Alps region. In addition to five young birds released into the wild, an unknown wild bird was also detected. Copyright LBV/NPV. Nella primavera del 2025, la mappa complessiva dei trasmettitori GPS ha mostrato una concentrazione nella regione delle Alpi di Berchtesgaden. Oltre a cinque giovani rilasciati in natura, è stato rilevato anche un altro gipeto selvatico non noto. Copyright LBV/NPV.

## RIASSUNTO

### Cinque anni di Progetto Gipeto nel Parco Nazionale Berchtesgaden



Dal 2021 la LBV e il Parco Nazionale Berchtesgaden stanno collaborando per la reintroduzione del Gipeto nelle Alpi Bavaresi. A oggi, sono stati rilasciati dieci soggetti, di cui nove ancora in vita. In questo lasso di tempo, è stata registrata un'elevata dispersione, anche con spostamenti di diverse centinaia di chilometri al giorno con frequenti ritorni verso l'area di rilascio.

Due giovani hanno mostrato una forte preferenza per le regioni alpine occidentali (Svizzera e Francia), il Parco Nazionale degli Alti Tauri, le aree intorno al Parco Nazionale Svizzero e lo Stelvio, così come Allgäu e Alpi Lechtal.

Tra gli eventi più interessanti si rimarca il comportamento "territoriale" dell'individuo "Bavaria" e il lungo tragitto verso il Mare del Nord che è stato percorso da "Vinzenz".

Nel marzo 2025, cinque degli individui reintrodotti sono ritornati presso l'area di rilascio. Grazie al progetto di reintroduzione del Gipeto, è già stato parzialmente vietato l'utilizzo di munizioni con piombo per carabine a canna rigata usate nella caccia agli ungulati all'interno delle foreste demaniali bavaresi ed è stata promossa un'importante campagna di sensibilizzazione sulla problematica del saturnismo, anche attraverso campagne sulle piattaforme web. La LBV si batte per un passaggio completo alle munizioni senza piombo, poiché il piombo nelle carcasse rappresenta una grave minaccia per i necrofagi. Nel Parco Nazionale di Berchtesgaden il piombo è vietato dal 2014.

Il progetto ha avuto un impatto sociale significativo: webcam in diretta, un blog, conferenze e iniziative di educazione ambientale hanno generato un elevato livello di coinvolgimento del pubblico. I dati GPS degli uccelli possono essere consultati sui siti web del LBV e del Parco Nazionale, con un ritardo di tre giorni a tutela dei gipeti.

Ampio spazio, infine, viene garantito all'attività di ricerca scientifica sulla biologia comportamentale tramite osservazioni continuative dei gipeti al sito di rilascio. I rilasci di 2-3 gipeti all'anno continueranno almeno fino al 2030 per conseguire l'obiettivo di una popolazione delle Alpi orientali autosufficiente.



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**Figure 3 - Ringing and marking a juvenile of Bearded Vulture before the release in Berchtesgaden National Park (2023). Franziska Loercher and Toni Wegscheider.** Inanellamento e marcaggio di un giovane Gipeto prima del rilascio nel Parco Nazionale Berchtesgaden (2023). Franziska Loercher e Toni Wegscheider.



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In accordance with the VCF criteria for selecting a hacking site for Bearded Vultures (Frey & Llopis, 2014), an evaluation matrix was developed to rank 13 potential hacking sites located in Natura 2000 sites of the Eastern and Central Balkan Mountains. During the field evaluation and after considering logistical aspects, the Bearded Vulture Committee selected the priority release site located in Sinite Kamani Nature Park (SKNP), with "Kotlenskaplanina" SPA as a backup.

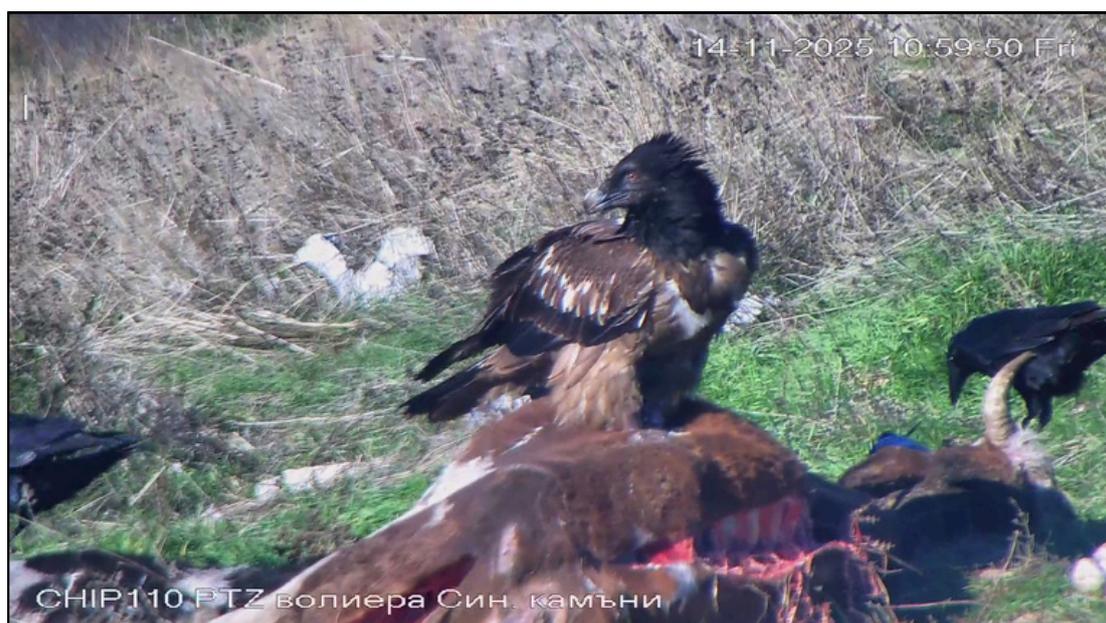
In accordance with the best practices of other reintroduction projects and adapted to local conditions, a well-structured hacking facility was constructed in SKNP to provide: protection against terrestrial predators (3+1 layers of fence); easy maintenance (food and water supply); possibility for quick reaction if needed; constant visual/video monitoring secured.

The first release from the hack of three individuals in Bulgaria took place in 2025. One juvenile died due to bacterial infection triggered by circovirus in combination with bad weather conditions. The second one, lost a large part of its primary feathers due to circovirus infection, but was rescued, stabilised, and survived in Green Balkans Wildlife Rehabilitation and Breeding Centre (WRBC). The third one fledged successfully and, after adapting to the surrounding areas, moved to the Central Balkan National Park, where it remained for 3 months, demonstrating independent foraging on natural food and water sources (Ivanov *et al.*, 2025). After snowfall covered the high pastures at the beginning of November, it returned to the hacking area (Figure 1) and adjacent areas. The distance covered since fledging (Figure 2) was over 3,300 km.

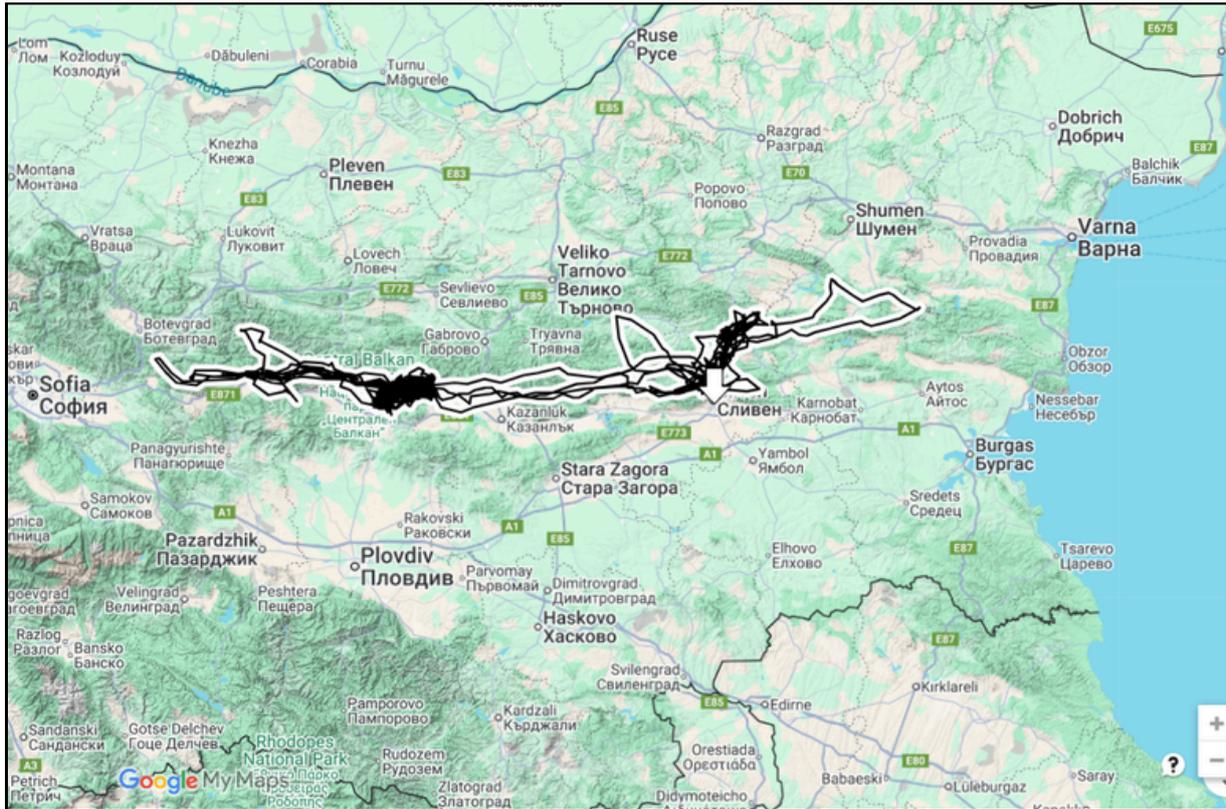
A provisional number of 15 or more chicks will be released by the end of the project in 2030.

## References

- Frey H. & A. Llopis. 2014. Criteria for selecting hacking sites for Bearded Vultures. VCF.
- Ivanov. I, S. Marin, I. Stoev, E. Stoynov, H. Peshev, I. Chukarov, K. Tsutsov, J. Andevski, G. Stoyanov, L. Bonchev, S. Stanchev, Z. Nikolova, N. Vangelova & A. Grozdanov. 2025. Bearded Vulture (*Gypaetus barbatus*) practical reintroduction in Bulgaria - status by 2025. International Conference on Natural Sciences & Biotechnology – KLIMENT'S DAYS 2025 with a Satellite Scientific Conference on "Reintroduction of Conservation-Reliant Species". Sofia University. Book of Abstracts. pp.91.



**Figure 1 - Boev at the feeding station settled close to the hacking site (Sinite Kamani Nature Park).**  
Il Gipeto Boev, nella stazione di alimentazione artificiale presso il sito di rilascio nel Parco Naturale Sinite Kamani.



**Figure 2 - Full track of Boev since fledging. This bird is the first Bulgarian Bearded Vulture released in the wild in 2025. The distance covered over 3,300 km. La traccia complessiva degli spostamenti di Boev, il primo Gipeto bulgaro rilasciato in natura. Nei primi mesi ha già compiuto spostamenti di oltre 3300 km.**

## RIASSUNTO



### Reintroduzione e prospettive del Gipeto in Bulgaria

In accordo con i criteri stabiliti dalla VCF per la selezione di siti di reintroduzione del Gipeto (Frey & Llopis, 2014), sono stati individuati 13 potenzializzati di rilascio, all'interno di Aree Natura 2000. Da un'accurata valutazione sul campo e considerati gli aspetti logistici, è stato selezionato il sito del Parco Naturale "Sinite Kamani" (SKNP) e, come sito di riserva, quello della ZPS "Kotlenskaplanina". In linea con altri progetti di reintroduzione, è stato costruito un sito artificiale in grado di offrire protezione dai predatori terrestri, facilitare la manutenzione (compreso l'apporto di cibo e acqua), permettere un rapido intervento in caso di necessità e garantire un monitoraggio (sia visivo sia attraverso videocamere) costante. Nel 2025 è avvenuto il primo rilascio in Bulgaria e sono stati reintrodotti tre individui, di cui uno è morto e un altro è stato recuperato e curato in cattività. Il terzo invece si è involato con successo e, dopo un periodo di adattamento, è partito per il Parco Nazionale dei Balcani Centrali, dove ha trascorso tre mesi, per poi, a inizio novembre, tornare nella zona del sito di rilascio, percorrendo dal momento dell'involò oltre 3300 km. Il progetto, nei suoi insieme, prevede di reintrodurre almeno 15 giovani gipeti entro il 2030.



## Enrique Avila Lopez

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The historical distribution area of the Bearded Vulture (*Gypaetus barbatus barbatus*) encompasses almost all the mountains of Eurasia and North Africa. In Andalusia, it was a very common bird until the end of the 19<sup>th</sup> century, with the Betic Cordillera (from Cádiz to Jaén and Almería) having the highest number of breeding individuals. The last documented breeding occurred in 1983. The last Bearded Vulture was sighted in the Sierras de Cazorla at the end of 1986.

In 2006, the first releases of individuals in Andalusia began, specifically in the Sierras de Cazorla, Segura y Las Villas Nature Park in the province of Jaén. In 2010, releases also began near Sierras de Castril Nature Park in Granada. The program began in 2024 in Sierra Nevada National Park, although it continues in Cazorla. Since 2006, a total of 102 chicks has been released, 99 of which fledged successfully.

In 2015, the first pair of Bearded Vultures successfully reproduced in the wild. The parents, 10-year-old "Tono" and 5-year-old "Blimunda," raised the first chick born in the wild, named "Esperanza."

Currently, in 2025, the most successful breeding year has concluded, with a total of 12 breeding sedentary pairs laying eggs, of which 6 chicks fledged (Table 1). All of them were marked with GPS satellite transmitters, leg bands, and bleaching markings. They also underwent a thorough veterinary check-up and sexing. Furthermore, a historic milestone for the Project was reached when "Esperanza," the first wild female born in Andalusia, successfully raised a chick on her first attempt, named "Salvaje" (Wild).

Of the 122 fledglings that have fledged in Andalusia, 37 died, recovered thanks to GPS transmitters. Additionally, 4 were rehabilitated through the network of Endangered Species Recovery Centers, 3 of which were released back into the wild, and one is currently being raised at a breeding center.

Apart from the mountain ranges where the reintroduction program is currently focused, the Sierras de Cazorla, Segura y las Villas Nature Park in Jaén and the Sierras de Castril Nature Park in Granada, the species is spreading both spatially and temporally across more territories. It is now frequently observed in Sierra Nevada, Sierra Mágina, the southern mountains of Jaén, Sierra Arana, and Huétor Santillán Nature Park, and even in the neighboring provinces of Albacete and Murcia. In spring, some floaters temporarily moved throughout the major mountain ranges of Iberia, even reaching Portugal, France and North Africa through the Strait of Gibraltar.

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## Il Gipeto in Andalusia (Spagna meridionale)



Storicamente l'areale di distribuzione del Gipeto comprendeva quasi tutti i rilievi montuosi dell'Eurasia e del Nord Africa. In Andalusia, la specie era molto comune fino alla fine del XIX secolo, con il maggior numero di esemplari nidificanti presenti nella Cordigliera Betica (localizzata tra le città di Cadice, Jaén e Almería). L'ultima nidificazione accertata risale al 1983 e l'ultimo avvistamento alla fine del 1986 (Sierra de Cazorla).

Nel 2006 sono stati avviati i primi rilasci in natura in Andalusia, in particolare nel Parco Naturale delle Sierras de Cazorla, Segura y Las Villas, nella Provincia di Jaèn e nel 2010 le reintroduzioni sono iniziate anche nel vicino Parco Naturale della Sierra de Castril, a Granada, per poi essere avviate anche nel Parco Nazionale della Sierra Nevada nel 2024. Dal 2006 sono stati rilasciati complessivamente 102 giovani, dei quali 99 che si sono involati con successo.

Nel 2015 è stata registrata la prima riproduzione con successo in natura; la coppia formata da "Tono" (10 anni) e "Blimunda" (5 anni) ha involato il giovane "Esperanza".

Il progetto sta conseguendo risultati considerevoli tanto che nel 2025 è stato registrato il più alto successo riproduttivo, con 12 coppie che hanno deposto e che hanno portato all'involato 6 giovani dotati di dispositivo GPS, di cui è stato determinato anche il sesso (Tabella 1). Inoltre, sempre nel 2025, si è registrato l'evento storico della riproduzione di "Esperanza" (primo Gipeto andaluso nato in natura) che ha allevato con successo il giovane "Salvaje", nel corso della sua prima nidificazione.

Dei 122 giovani involati in Andalusia, 37 sono stati recuperati morti (grazie ai dispositivi GPS) e 4 feriti, di cui 3 liberati nuovamente dopo le cure e 1 ancora oggi in degenza in un Centro di recupero.



Oltre alle catene montuose interessate dal programma di reintroduzione (Parco Naturale delle Sierras di Cazorla, Segura e Las Villas, a Jaén, e il Parco Naturale della Sierra di Castril, a Granada), la specie ultimamente si sta diffondendo anche in altri contesti, come la Sierra Nevada, la Sierra Magina (a Sud di Jaén), la Sierra Arana, il Parco Naturale di Huétor Santillán e, persino, nelle province limitrofe di Albacete e Murcia.

Infine, in primavera, durante il periodo di maggiore dispersione degli esemplari non territoriali, alcuni individui si dirigono in Portogallo, Francia e, in un'occasione, è stato persino documentato l'attraversamento dello Stretto di Gibilterra con l'arrivo nel continente africano.

**Table 1 - Key breeding parameters for the Bearded Vulture population in Andalusia (Spain).**  
Principali parametri riproduttivi per la popolazione di Gipeto in Andalusia (Spagna).

<b>Year Anno</b>	<b>Resident pairs Coppie residenti</b>	<b>N eggs-laying N deposizioni</b>	<b>N fledglings N involati</b>
<b>2022</b>	9	6	0*
<b>2023</b>	10	8	2
<b>2024</b>	11	9	4
<b>2025</b>	12	12	6

\*losses due to Avian flu (3 chicks dead, 2 recovered and positive, and one missing).  
Perdite dovute all'influenza aviaria (3 pulcini morti, 2 recuperati positivi e uno disperso).

# Latest on the Bearded Vulture!

## Updates from the peer-reviewed world (2022-2025)



**Joao L. Guilherme**

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Since the last Info Gipeto, many exciting papers on the Bearded Vulture have been published, each contributing a unique piece to the puzzle of understanding and protecting our beloved species. From new insights into their behaviour and ecology, to innovative conservation strategies, and motives of celebration, recent studies are shaping the future of Bearded Vulture conservation in Europe and beyond. Here, I share a personal selection of papers, which may not necessarily reflect their broader impact, but have caught my eye.

Nearly forty years after the release of the first fledglings, the core population of Bearded Vultures in the Alps has become self-sustaining from a demographic point of view - a testament to the tireless work of conservationists and a truly rewarding achievement! Schaub *et al.* (2024) presented a detailed model based on long-term tracking, sightings, genetic and breeding data, revealing that high adult survival rates and consistent reproductive success of the core population have driven the population to this point. If current conditions persist, there's even the possibility of population numbers doubling within the next decade. Still, many challenges remain for the alpine population as growth in more peripheric areas has been slower, underlining the need for continued targeted conservation.

In the Pyrenees, although the population is nearly three times larger than that in the Alps, Navarro *et al.* (2024) reported a continuous decline in productivity and stagnation in juvenile survival rates over the past three decades in the Aragonese region. This trend persists despite the presence of unused areas of seemingly suitable habitat that could support Bearded Vulture expansion in the Pyrenees (Estrada *et al.*, 2025). In France, the large exploratory movements of reintroduced Bearded Vultures in the Massif Central, and their subsequent settlement in areas far away, puts in evidence the challenging task of connecting the Alpine and Pyrenean populations (Tréhin *et al.*, 2024). In the Lanzo Valleys in Italy, 4 successful breeding have now been confirmed (Chiereghin *et al.*, 2023), and from further east, a new analysis reports a stable population of 8 to 9 breeding pairs in Azerbaijan (Mammadov *et al.*, 2024).

The successful reintroduction and recover of Bearded Vultures in the Alps rely on a healthy captive population. Torres-Blas *et al.* (2023) provided an updated clinical baseline (including novel data on basal feather and serum corticosterone levels) for 16 captive Bearded Vultures in Catalonia, emphasizing the importance of ongoing surveillance to monitor health of the captive stock to release healthy individuals into the wild. This is particularly important considering emerging threats such as Highly Pathogenic Avian Influenza A (H5N1), which has recently been detected in both captive and wild Bearded Vultures in Spain (Martínez *et al.*, 2025).

Wind farm development is becoming an increasing threat to vultures worldwide and spatially explicit planning tools like that presented by Vignali *et al.* (2022) for Switzerland are very much needed. Their study models the probability of Bearded Vultures flying at collision-risk heights across Switzerland using high-resolution tracking data from 28 individuals. By combining this data with environmental variables such as land cover, food availability, and wind speed, they developed a conflict map to help guide planning and decision-making of future wind farm development in the country. Powerline collisions and electrocution continue to be a top reported cause of mortality in Bearded Vultures (Ives *et al.*, 2022).

Wildlife crime, in particular poisoning, remains a pervasive threat. As the widespread use of pesticides (namely carbofuran) continues to affect raptors across Europe (Buij *et al.*, 2025), new approaches are needed to better prevent this threat. Moreno *et al.* (2024) offer a novel, systemic perspective on illegal wildlife control in Spain, focusing on the motivations and profiles of perpetrators rather than just the methods or species affected. Its findings can help design more effective preventive policies and law enforcement strategies. In Asturias, the use of GPS-tracked Bearded Vultures as sentinels for detecting wildlife poisoning, showed that 95% of Bearded Vulture space use in Asturias overlaps with high-risk poisoning zones (Rodríguez-Pérez *et al.*, 2025). By integrating movement data with anti-poison canine units and risk maps, the study provides a framework to optimize resource allocation through reinforcement of patrolling in areas most at poisoning risk.

Technologies like GPS tags have revolutionized the monitoring of Bearded Vultures, offering unprecedented insight into their private lives. One remarkable example is Adrian, a Spanish Bearded Vulture, whose movements were tracked for a record 14 years (Margalida *et al.*, 2024) though there is still room for engineering upgrades as Adrian ultimately outlived the tag! The use of other technologies, like drones, is less developed but holds great promise, and the review by Zink *et al.* (2023) on European vultures' responses to drone use offers an important base for the ongoing debate on the use of these technologies in vulture conservation research. The study highlights the need for caution when using drones near Bearded Vulture nests, as the species is particularly sensitive during breeding, with a risk of nest abandonment. As drone technology advances, it's crucial that guidelines are regularly updated based on carefully conducted trials.

On a broader scale, the future of Bearded Vultures globally is also of concern. Studies on the species' global distribution, based on topographical and climatic variables, indicate that Bearded Vultures are likely to experience a contraction of their range by 2070, especially in warmer regions such as Africa and Asia, where the species is already in poor condition (Subedi *et al.*, 2023). Projections show that only 16% of the species' suitable range is currently protected (Yousefi *et al.*, 2023), raising concerns that this percentage could decrease further as climate change affects the availability of suitable habitats.

Finally, a less conventional but fascinating study uncovered human artifacts such as a sandal, basketry fragments, and a crossbow bolt in Bearded Vulture nests in southern Spain, where the species is now extinct (Margalida, *et al.*, 2025). While these items provide intriguing ethnographic value, they also help establish a baseline for understanding the historical distribution and availability of prey species that supported the Bearded Vulture in the region.

These recent scientific contributions help shaping the future of Bearded Vulture conservation, but much remains to be done. Ongoing monitoring and research will be vital for the species' continued recovery, particularly as new challenges like windfarm development and emerging diseases arise. International cooperation will be essential to ensure a positive future for Bearded Vultures.

- Buij, R., Richards, N. L., Rooney, E., Ruddock, M., Horváth, M., Krone, O., Mason, H., Shorrock, G., Chriél, M., Deák, G., Demerdzhiev, D., Deutschová, L., Doktorová, S., Inderwildi, E., Jaspers, V. L. B., Jenny, D., Mikuska, T., Miskovic, M., ... & Ntemiri K. (2025). Raptor Poisoning in Europe Between 1996 and 2016: A Continental Assessment of the Most Affected Species and the Most Used Poisons. *Journal of Raptor Research*, 59 (2).
- Chiereghin, M., Prezzi, A., & Sartirana, F. (2023). Update on successful nesting of bearded vulture (*Gypaetus barbatus*) in the Lanzo Valleys, Piedmont region (NW Italy). *Rivista Italiana Di Ornitologia*, 93(2). <https://doi.org/10.4081/rio.2023.690>
- Estrada, A., Martínez-Padilla, J., Martínez, J. M., Anadón, J. D., de la Cruz, L., Vicente-Serrano, S. M., García, D., Vega, E., Villanúa, D., López-Liberal, M., & Margalida, A. (2025). Linking favourability models with breeding output: A modelling approach to improve management and conservation actions for a threatened avian scavenger. *Biological Conservation*, 307, 111165. <https://doi.org/10.1016/j.biocon.2025.111165>
- Mammadov, A. F., Karimov, T. A., Matsyura, A. V., & Ganbarov, D. S. (2025). Spatial ecology and population trends of the scavengers (Aves: Falconiformes) in Azerbaijan. *Acta Biologica Sibirica*, 11. <https://doi.org/10.5281/zenodo.15584970>
- Margalida, A., Couto, S., Pinedo, S. O., Gil-Sánchez, J. M., Agudo Pérez, L., & Marín-Arroyo, A. B. (2025). The Bearded Vulture as an accumulator of historical remains: Insights for future ecological and biocultural studies. *Ecology*, 106(9), e70191. <https://doi.org/10.1002/ecy.70191>
- Martínez, R., Agulló-Ros, I., González, M., Ruano, M. J., Zecchin, B., Zorrilla, I., Guerra, R., Paniagua, J., Cano-Terriza, D., & García-Bocanegra, I. (2025). Highly Pathogenic Avian Influenza A (H5N1) Infection in Bearded Vultures in Spain. *Zoonoses and Public Health*, 72(6), 544–549. <https://doi.org/10.1111/zph.70003>
- Moreno, J. A. A., García, J. A. F., Jiménez, F. V., & Touza, J. M. Q. (2024). A descriptive study of poisoners and users of other indiscriminate means to illegally control wildlife in Spain. *Conservation Science and Practice*, 6 (8), e13194. <https://doi.org/10.1111/csp2.13194>
- Navarro, I., Farfán, M. Á., Gil, J. A., & Muñoz, A. R. (2024). Survival Estimation Using Multistate Cormack–Jolly–Seber Models-The Case of the Bearded Vulture *Gypaetus barbatus* in Spain. *Animals*, 14 (3), 403. <https://doi.org/10.3390/ani14030403>
- Rodríguez-Pérez, J., Bravo-Chaparro, E., Fernández-García, M., González, J. C., Báguena, G., González-Quirós, P., López-Bao, J. V., & Mateo-Tomás, P. (2025). Integrating GPS-Tracked Sentinel Species Into the Fight Against Wildlife Poisoning. *Conservation Letters*, 18(1), e13086. <https://doi.org/10.1111/conl.13086>

- Schaub, M., Loercher, F., Hegglin, D., & Arlettaz, R. (2024). Demographic assessment of reintroduced bearded vultures in the Alps: Success in the core, challenges in the periphery. *Ecological Solutions and Evidence*, 5 (2), e12347. <https://doi.org/10.1002/2688-8319.12347>
- Subedi, T. R., Pérez-García, J. M., Gurung, S., Baral, H. S., Virani, M. Z., Sah, S. A. M., & Anadón, J. D. (2023). Global range dynamics of the Bearded Vulture ( *Gypaetus barbatus* ) from the Last Glacial Maximum to climate change scenarios. *Ibis*, 165 (2), 403–419.
- Torres-Blas, I., Migura-García, L., Cerdà-Cuéllar, M., Carbajal, A., Lopez-Bejar, M., Mateo, R., Herrero-Villar, M., Llopis, A., & Marco, I. (2023). Health assessment of captive bearded vultures (*Gypaetus barbatus*) in Catalonia (Spain). *Journal of Zoo and Wildlife Medicine*, 54(3). <https://doi.org/10.1638/2022-0057>
- Tréhin, C., Duriez, O., Sarrazin, F., Betton, B., Fonderflick, J., Loercher, F., Marlé, E., Seguin, J., Traversier, J., Ziletti, N., & Mihoub, J. (2024). Long-distance post-release movements challenge the metapopulation restoration of Bearded Vultures. *Ecosphere*, 15(8), e4856. <https://doi.org/10.1002/ecs2.4856>
- Yousefi, M., Mohammadi, S., & Kafash, A. (2023). Modeling global habitat suitability and environmental predictor of distribution of a Near Threatened avian scavenger at a high spatial resolution. *Frontiers in Ecology and Evolution*, 11. <https://doi.org/10.3389/fevo.2023.1112962>
- Zink, R., Kmetova-Biro, E., Agnezy, S., Klisurov, I., & Margalida, A. (2023). Assessing the potential disturbance effects on the use of Unmanned Aircraft Systems (UASs) for European vultures research: A review and conservation recommendations. *Bird Conservation International*, 33, e45. <https://doi.org/10.1017/S0959270923000102>

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### RIASSUNTO

#### Aggiornamenti sul Gipeto dal mondo delle pubblicazioni scientifiche peer-reviewed nel periodo (2022-2025)



Dall'ultimo numero di Info Gipeto, sono state prodotte diverse pubblicazioni scientifiche peer-reviewed inerenti al Gipeto. Viene qui fornita una selezione personale di articoli come, ad esempio, quello inerente alla demografia della popolazione alpina che ormai è diventata autosufficiente (Schaub *et al.*, 2024). Il modello prodotto sottolinea che, se le attuali condizioni dovessero persistere, vi sarebbe la concreta possibilità che la popolazione raddoppi nel prossimo decennio. Spunti di interesse provengono anche dai Pirenei dove, sebbene la popolazione sia quasi tre volte più numerosa di quella alpina, Navarro *et al.* (2024) segnalano un continuo declino della produttività e una stagnazione nei tassi di sopravvivenza giovanile negli ultimi 30 anni (Aragona). Dalla Francia, invece, si segnalano gli ampi erraticismi dei gipeti reintrodotti nel Massiccio Centrale e si sottolineano le difficoltà di collegare le popolazioni alpine e pirenaiche (Tréhin *et al.*, 2024). Segnali positivi provengono dalle Alpi piemontesi (Chiereghin *et al.*, 2023) e dall'Azerbaijan ove la popolazione è considerata stabile con 8-9 coppie nidificanti (Mammadov *et al.*, 2024). Da sottolineare, inoltre, gli articoli legati alla salute della popolazione in cattività (Torres-Blas *et al.*, 2023) e alle minacce emergenti ex situ come l'influenza aviaria (H5N1) altamente patogena (Martínez *et al.*, 2025) che si sommano a quelle presenti in natura quali l'industria eolica (Vignali *et al.*, 2022), gli elettrodotti (Ives *et al.*, 2022), l'avvelenamento (Buij *et al.*, 2025; Moreno *et al.*, 2024) e i cambiamenti climatici soprattutto in Africa e Asia (Subedi *et al.*, 2023; Yousefi *et al.*, 2023).

I dispositivi GPS hanno rivoluzionato il monitoraggio, offrendo una visione senza precedenti della biologia della specie; un caso record riguarda un individuo seguito ininterrottamente per 14 anni (Margalida *et al.*, 2024); tuttavia, la tecnologia va usata con enorme cautela per non inficiare il successo riproduttivo come indica Zink *et al.*, (2023) relativamente all'uso dei droni per monitorare la nidificazione delle coppie. Merita, infine, una nota di rilievo il ritrovamento di manufatti umani risalenti al XIII secolo in un ex nido di Gipeto nel Sud della Spagna. È fondamentale, dunque, che l'attività di monitoraggio e ricerca scientifica continui per la conservazione della specie a livello internazionale.



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With this new issue, the editorial board of Info Gipeto has decided to open a bibliographic column dedicated to scientific publications on aspects of the natural history or conservation of the Bearded Vulture. The intention is to facilitate bibliographic research for those interested. To start, we have included in the column the works published, mainly in peer reviewed journals and books, in the period 2020-2025. For each item, the relevant Doi code is reported, if available. Links to some of the main bulletins on the species have also been included. Theses, technical reports, conference proceedings as well as other works of "grey literature" were excluded. The present list includes, in total, 28 titles. We will be grateful to those who want to point out articles that escaped this first selection. They will be included in the next issue of Info Gipeto.

## Bibliografia selezionata sul Gipeto 2020-2025

Il comitato editoriale di Info Gipeto ha deciso di aprire, con questo nuovo numero, una rubrica bibliografica dedicata alle pubblicazioni scientifiche su aspetti della storia naturale o della conservazione del Gipeto. L'intenzione è quella di facilitare la ricerca bibliografica a quanti interessati. Per cominciare, abbiamo incluso nella rubrica le opere pubblicate, principalmente su riviste "peer-reviewed" e libri, nel periodo 2020-2025. Per ogni titolo, è riportato il codice Doi pertinente, se disponibile. Sono stati inclusi anche link ad alcuni dei principali bollettini sulla specie. Sono stati esclusi tesi, rapporti tecnici, atti di conferenze e altre opere di "letteratura grigia". L'elenco attuale comprende, in totale, 28 titoli. Saremo grati a chi vorrà indicare articoli che sono sfuggiti a questa prima selezione. Saranno inclusi nel prossimo numero di Info Gipeto.

### BULLETINS / BOLLETTINI

#### Aree protette Alpi Marittime

info GIPETO



#### Parco Nazionale dello Stelvio



#### Info Gipaète Mercantour



#### Avvoltoi Piemonte



### PAPERS-BOOKS / ARTICOLI-LIBRI

- Arroyo B., Lafitte J., Sourp E., Rousseau D., Albert L., Heuacker V., Terrasse F. & Razin M., 2021. Population expansion and breeding success of bearded vultures *Gypaetus barbatus* in the French Pyrenees: Results from long term population monitoring. *Ibis*, 163, 213–230. Doi: 10.1111/ibi.12852.
- Bassi E., 2022. Gipeto: 270-271. In: Lardelli R., Bogliani G., Brichetti P., Caprio E., Celada C., Conca G., Fraticelli F., Gustin M. (...) & Brambilla M. (a cura di), 2022. Atlante degli Uccelli nidificanti in Italia. Edizioni Belvedere (Latina), *historia naturae* (11), 704 pp
- Chiereghin M., Prezzi A. & Sartirana F., 2023. Update on successful nesting of bearded vulture (*Gypaetus barbatus*) in the Lanzo Valleys, Piedmont region (NW Italy). *Riv. It. Orn. - Res. in Ornith.*, 93: 57-60, Doi: 10.4081/rio.2023.690.

- Colomer, M.À., Oliva-Vidal P., Jiménez J., Martínez J.M. & Margalida A., 2020. Prioritizing among removal scenarios for the reintroduction of endangered species: insights from bearded vulture simulation modeling. *Animal Conservation*, 23: 396-406. Doi:10.1111/acv.12549.
- Duchateau S., Chéliz G., Gil J.A. & Lopez-Lopez P., 2022. Adult coloration of the Bearded Vulture (*Gypaetus barbatus*) in the Pyrenees: relation to sex, mating system and productivity. *Ibis*, 164: 505-518, doi: 10.1111/ibi.13032.
- Duchateau S. & Fontanilles P., 2024. Ferruginous springs as colouring sites for Bearded Vulture (*Gypaetus barbatus*): characterisation, availability and applications for species conservation in the French Pyrenees. *J. Ornith.*, <https://doi.org/10.1007/s10336-024-02189-6>.
- Duriez O., Margalida A., Albert L., Arroyo B., Couanon V., Loustau H., Razin M. & Mihoub J.-B., 2020. Tolerance of bearded vultures to human activities: response to Comor *et al.* (2019). *Human–Wildlife Interactions*, 14: 531–537. <https://www.jstor.org/stable/27316229?seq=1>.
- Fasce P., 2022. Nidification très précoce d'une femelle de Gypaète barbu *Gypaetus barbatus*. *Nos Oiseaux*, 67: 2018-219.
- García-Jiménez, R., Martínez-González J.M., Oliva-Vidal P., Piqué, Sesé J.A. & Margalida A.. 2020. Nocturnal flights by Bearded Vultures *Gypaetus barbatus* detected for the first-time using GPS and accelerometer data. *Bird Study*, 67: 135-14. <https://doi.org/10.1080/00063657.2020.1781054>
- Londei, 2024. The beard of the Bearded Vulture (*Gypaetus barbatus*): citizen science suggests an adjustable airflow sensor. *Rivista Italiana di Ornitologia - Research in Ornithology*, 94: 53-56, Doi: 10.4081/rio.2024.767
- Margalida A., Jiménez J., Martínez J.M., Sesé J.A., García-Ferré D., Llamas A., Razin M., Colomer A. & Arroyo B., 2020. An assessment of population size and demographic drivers of the Bearded Vulture using integrated population models. *Ecol. Monogr.*, 90 (3): e01414. 10.1002/ecm.1414.
- Margalida, A., Almirall I. & Negro J.J., 2023. New Insights into the Cosmetic Behaviour of Bearded Vultures: Ferruginous Springs Are Shared Sequentially. *Animals*, 13, 2409. <https://doi.org/10.3390/ani13152409>.
- Margalida A. & Martínez J. M. (Eds.), 2020. El quebrantahuesos en España, población reproductora en 2018 y método de censo. Instituto de Investigación en Recursos Cinegéticos (CSIC-UCLM-JCCM), Ciudad Real, España. 72 pp.
- Nessi A., Balestrieri B., Bassi E., Scarpa F., Saliu F., Lasagni M., Mercogliano A., Roverselli A. & Tremolada P., 2025. Litter and microplastic contamination in bearded vultures (*Gypaetus barbatus*) from the Central Italian Alps: a preliminary study. *Env. Sc. Poll. Res.*, <https://doi.org/10.1007/s11356-025-36786-6>.
- Pedrini P., Rizzolli F., Volcan G., Bragalanti N., Genero F., Angeli F., 2024. Il gipeto (*Gypaetus barbatus*) in provincia di Trento: sintesi delle segnalazioni nel periodo 1987-2022. *Studi Trentini di Scienze Naturali*, 104: 17-28.
- Perodaskalaki A. & Xirouchakis S., 2024. The behavioral pattern of the nesting Bearded vulture (*Gypaetus barbatus*) on the Island of Crete. *Birds*, 5: 845-857; <https://doi.org/10.3390/birds5040056>.
- Praz J.-C., 2022. Réintroduction du gypaète dans les Alpes une première tentative historique manquée. *Fauna•vs info*, 42: 6-9. [https://www.fauna-vs.ch/?action=get\\_file&id=46&resource\\_link\\_id=33d](https://www.fauna-vs.ch/?action=get_file&id=46&resource_link_id=33d).
- Praz J.-C. & Gerber S., 2024. Histoire de la disparition du Gypaète *Gypaetus barbatus* en Suisse au travers des collections de ses musées. *Nos Oiseaux*, 558: 217-226.
- Rizzolli F. & Pedrotti P., 2024. La prima nidificazione di gipeto (*Gypaetus barbatus*) in provincia di Trento (Italy). *Studi Trentini di Scienze Naturali*, 104: 29-32.
- Santos-Cottin D., Arroyo B., Loercher F., Brambilla A. & Terraube J., 2025. Assessing the outcome of reintroduction efforts: Trends in population size and drivers of breeding success in alpine bearded vultures. *Conservation Science and Practice*, e70027. <https://doi.org/10.1111/csp2.70027>.
- Sanz M., Daura J., Costa A. M. & Araujo A. C., 2023. The characterization of bearded vulture (*Gypaetus barbatus*) coprolites in the archaeological record. *Sci. Rep.*, 13: 57, <https://doi.org/10.1038/s41598-022-25288-x>.
- Schaub M., Loercher F., Hegglin D. & Artettaz R., 2024. Demographic assessment of reintroduced bearded vultures in the Alps: success in the core, challenges in the periphery. *Ecological Solutions and Evidence*, 5, e12347. Doi: 10.1002/2688-8319.12347.

- Streicher M., Krüger S., Loercher F. & Willows-Munro S., 2021. Evidence of genetic structure in the wide-ranging bearded vulture (*Gypaetus barbatus* (Linnaeus, 1758)). *BMC BMC Ecology and Evolution*, 21:42, <https://doi.org/10.1186/s12862-021-01760-6>.
- Subedi T.R., Pérez-García J. M., Sah S. A. M, Gurung S., Baral H. S., Poudyal L. P., Lee H., Thomsett S., Virani M. Z. & Anadón J. D., 2020. Spatial and temporal movement of the Bearded Vulture using GPS telemetry in the Himalayas of Nepal. *Ibis*, 162: 563–571, Doi: 10.1111/ibi.12799.
- Tréhin C., Duriez O., Sarrazin F., Betton B., Fonderflick J., Loercher F., Marlé E., Seguin J.-F., Traversier J., Ziletti N & Mihoub J.-B., 2024. Long-distance post-release movements challenge the metapopulation restoration of Bearded Vultures. *Ecosphere*, 15:e4856, Doi: 10.1002/ecs2.4856.
- Vignali S., Loercher F., Hegglin D., Arlettaz R. & Braunisch V., 2021. Modelling the habitat selection of the bearded vulture to predict areas of potential conflict with wind energy development in the Swiss Alps. *Global Ecology and Conservation*, 25, e01405, <https://doi.org/10.1016/j.gecco.2020.e01405>
- Vignali S, Lörcher F, Hegglin D, Arlettaz R, Braunisch V., 2022. A predictive flight altitude model for avoiding future conflicts between an emblematic raptor and wind energy development in the Swiss Alps. *R. Soc. Open Sci.*, 9: 211041. <https://doi.org/10.1098/rsos.211041>.
- Weyrich H., Baumgartner H., Lörcher F.&Hegglin D. 2021. Der Bartgeier. Seine erfolgreiche Wiederansiedlung in den Alpen. Haupt Verlag, Bern. Mehr zum Thema „Geier“ finden Sie in *BiuZ*, 4(24), 322.



**Figure 1 - A GPS equipped Bearded Vulture.**  
Un Gipeto dotato di GPS.

# “Lead, a borderless poison” - Gorizia, 17-18<sup>th</sup> October 2025



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The first international conference in Italy on the effects of lead in hunting ammunition on wild birds, the environment, and human health was held on 17<sup>th</sup> and 18<sup>th</sup> October, 2025.

The conference, organized by ASTORE FVG APS, with financial support from the Friuli Venezia Giulia Regional Council, the Julian Prealps Nature Park, and the VCF (Vulture Conservation Foundation), was held thanks to the strong collaboration of the CISO (Italian Center for Ornithological Studies) and the Cornino Lake Regional Nature Reserve. The initiative was part of the “GO! 2025 Nova Gorica Gorizia European Capital of Culture” event.

The conference was sponsored for the first time ever by SITOX, the Italian Society of Medical Toxicology, demonstrating that lead in ammunition is now considered clinically dangerous to human health, despite its widespread use and release into the environment during hunting activities.

The conference discussed the effects of lead in ammunition on wildlife, the environment, and human health, in accordance with the “*One Health*” approach promoted by international health authorities.

In addition to the two internationally renowned guests, Rafael Mateo of the Institute of Environmental Assessment and Water Research of Barcelona (IDAEA-CSIC, ES) and Niels Kanstrup of the University of Aarhus (DK), the papers were presented by Alessandro Andreotti, senior technologist of ISPRA (Italian national institute for environmental protection and research) and co-author of the ISPRA Technical Report “Lead in hunting ammunition: problems and possible solutions”, Enrico Bassi of the Vulture Conservation Foundation and vice President of the Italian Centre for Ornithological Studies, Stefano Pesaro, veterinarian and researcher at the University of Udine, Mauro Ferri, veterinarian expert in game meat quality and member of the SIEF (Italian Society of Fauna Ecopathology), Giorgio Fedrizzi and Damiano Accurso of the Experimental Zooprophyllactic Institute of Lombardy and Emilia-Romagna, Giuseppe De Palma, hospital director of the Spedali Civili of Brescia and Professor at the University of Medicine of Brescia and Andrea Giampreti, toxicologist of the Poison Control Centre of the Papa Giovanni XXIII Hospital, Anna Mazzolini of the European Chemicals Agency ECHA, Matteo Brogi journalist and editor-in-chief of the hunting magazine Hunting Log, Roberto Viganò, former wildlife technician of numerous Alpine Hunting Districts and veterinarian of the ASL VCO of Domodossola (VB), José Pedro Tavares Director of the VCF, Bolesław Słociński, Manager of the “Safe Flyways” Program of the Biom Association - BirdLife Croatia and Dario Colombi, wildlife technician of the Central Directorate for Agri-food, Forestry and Fish Resources - Hunting and Fish Resources of the Friuli Venezia Giulia region.

From the very beginning, thanks to Alessandro Andreotti's introduction, the reasons for banning lead in hunting ammunition were explained. Lead, which currently kills 2,300,000 birds per year in EU countries alone through poisoning, exposes approximately 150 million birds to the risk of poisoning. These are impressive numbers, but they shouldn't be surprising considering that hunters in Europe dump at least 14,000 tons of lead every year. Hunting has thus become the main source of pollution with the fewest restrictions, and is there forenow considered completely unsustainable.

Rafael Mateo, an ecotoxicologist, provided a broad and concerning perspective on the European situation, describing how lead dispersed in the environment enters the food chains of various aquatic and terrestrial bird species, impacting their biology and survival. As many as 18 European birds of prey are contaminated with lead: vultures, eagles, small diurnal birds of prey, as well as the Eurasian Eagle Owl, the Long-eared Owl, and the Barn Owl. Studies show how lead also significantly impacts their population trends. In fact, 10 species show a 6% annual growth deficit due to lead exposure, with peak population losses of 14.4% in the White-tailed Eagle, 13% in the Golden Eagle, and 12% in the Griffon Vulture.

It is also shocking that 8.7% of European ducks die each year from lead poisoning, compared to 2-3% in North America where lead has been banned for decades.

Mateo warns that the effects of lead in wetland sediments and terrestrial environments will persist for decades, even after a complete ban on ammunition, as pellets will remain in the topsoil for nearly a century. Dramatic figures are found in Italy, where wetlands are home to high numbers of wintering birds with densities exceeding 300 pellets per square meter, and around hunting lodges, where densities can reach up to 120 pellets per square meter.

Enrico Bassi, coordinator of an international study on large birds of prey such as the Golden Eagle, Griffon Vulture, Bearded Vulture, and Cinereous Vulture in central and southern Europe, highlighted the extent of the problem by finding that 44% of 252 carcasses were contaminated with hunting lead in at least one tissue. Birds of prey are lethally exposed to the effects of poisoning by feeding on viscera and flesh contaminated with lead bullet fragments. In Italy, the situation is even more alarming, as 67% and 50% of birds of prey in the Alps and Apennines, respectively, were contaminated (with both complete and incomplete analyses).

Using only complete analyses of a pool of tissues, the percentages rise to 83% nationwide (with values of 82% in the Alps and 90% in the Apennines). In Lombardy, where in 2025 alone, three golden eagles were recovered dead or in distress from pre-Alpine lakes following lead poisoning, the percentage is 74%, the highest recorded in Italy

Stefano Pesaro, a veterinarian and researcher at the University of Udine, confirmed this tragic picture for Friuli Venezia Giulia as well, using the rare Griffon Vulture as a sentinel species exposed to lead, which, when contaminated, exhibits renal and immune alterations.

During analyses of the blood extracted from 76 griffon vultures captured at the feeding station of the Cornino Lake Regional Nature Reserve (UD), the percentage of contaminated raptors was found to be 19% in 2019 and 64% in 2023.

This sharp increase may be linked to a significant reduction in the feeding of pig carcasses, which for years was the main source of food at the Cornino feeding station, but which, due to African swine fever (ASF), was effectively banned. This has inevitably increased the risk of lead exposure for these vultures, given that, in the wild, they feed exclusively on carcasses and viscera, many of which are contaminated with lead as a result of hunting.

The topic of food safety was explored in depth by Mauro Ferri (former veterinarian at the Modena Local Health Authority with extensive expertise in the hygiene and quality of game meat) and Giorgio Fedrizzi with Damiano Accurso of the Experimental Zooprophyllactic Institute of Lombardy and Emilia-Romagna.

Both speeches highlighted how the legislations completely lacking in defining a safe threshold for lead levels in game meat, unlike the strict protocols for farmed meat.

While Ferri emphasizes that lead has been banned from a multitude of activities and production sectors, including the production of so-called MOCA (Materials and Objects in Contact with Food, Regulation No. 1935/2004), it is unclear why the Italian government has not yet imposed serious and unequivocal limits on game meat. While it is true that game meat is often organoleptically superior, it is equally true that a moment (the moment of firing a gun) is enough to permanently contaminate it with hundreds of tiny fragments of lead ammunition, almost always invisible to the human eye and therefore ingested.

Equally paradoxical is the situation expressed by Fedrizzi, who highlighted a "regulatory vacuum" in Europe: while farmed meat has precise lead limits (consumable if below 0.10 mg/kg), game meat enjoys absolute anarchy and is beyond any type of regulation.

The meat of a pig, raised, slaughtered, and sold in large-scale retail outlets, is traceable and not contaminated with lead, while that of a slaughtered wild boar can show lead levels up to ten times higher than the limit established for farmed meat without any measures being taken to protect consumers. Therefore, there is a significant discrepancy in the approach of the competent authorities, difficult to understand from a technical perspective, in assessing lead levels in meat based on the different origins of the animals.

If the MOCA regulation were also adopted for hunting, lead would automatically be banned for all wild animal harvests. Instead, those most at risk of poisoning would be hunters, their children and their families.

Along the same lines, and certainly among the most eagerly anticipated, were the speeches by Professor Giuseppe De Palma of the Faculty of Medicine at the University of Brescia and Andrea Giampreti, a toxicologist at the Papa Giovanni XXIII Hospital in Bergamo, who declared their intention to undertake an ambitious epidemiological study in Italy on exposure to lead from hunting.

Lead is an extremely toxic substance by contact, inhalation, and ingestion and is very dangerous to human health even at minimal concentrations and low doses, as typically occurs through the consumption of game meat.

From a preventative stand point, the two doctors state that lead is effectively a silent killer, associated with an increased risk of cardiovascular disease (heart attack, hypertension, and other heart conditions). Because these conditions have a long latency period, they are likely influenced by high exposures during childhood and adolescence, even when blood lead levels in adults are low, as the World Health Organization emphasizes.

For this reason, in adults, it is absolutely necessary to reduce (or better yet eliminate) any type of intake of this neurotoxin, both from an occupational and dietary perspective, while it should be completely avoided in the diet of children under 7 years of age, women of childbearing age, and the elderly over 70 years of age.

Anna Mazzolini (ECHA), speaking live from her Finnish headquarters in Helsinki, clarified the regulatory process of recent years, which led to the historic approval of the ban on lead shot in wetlands in the European Union in 2021 (Regulation (EU) 2021/57).

ECHA, retracing the steps of the recent past, underlined the independence and importance of the work carried out by the two different Committees (RAC and SEAC) consulted respectively for the risk assessment posed by the use of lead in hunting and to analyse the socioeconomic impact of the proposed restrictions, providing unequivocal conclusions.

The complex procedural process, initiated at the request of the EU Commission, assessed the widespread availability of alternative ammunition to lead on the market, concluding that lead-free hunting is technically feasible, economically accessible, and safer for human health and the environment.

Also of great interest was the speech by Matteo Brogi, journalist and hunter, who initially presented a cost-benefit comparison between traditional lead ammunition and those made from alternative materials, comparing prices and ballistics.

With his presentation, titled "ZERO Lead," Brogi has effectively paved the way for a transition that defines a complex but absolutely achievable goal through new industrial investments, training, and a change in mindset among hunters. This appears to be one of the key points: the individual choice that every hunter, who can call himself "modern," can no longer avoid.

Hunters should consciously choose non-toxic ammunition to protect the environment, wildlife, and the human health of their families and buyers. This choice could also contribute to improving public acceptance of hunting.

The speech by Danish researcher and hunter Niels Kanstrup also attracted considerable interest. In just ten minutes, he literally demolished the main arguments still used today to hinder the transition, emphasizing that alternative ammunition is non-toxic, does not increase hunting accidents, and that its effectiveness depends on the quality of the shooter and not the metal used.

In debunking the myths and fears of European hunters, Kanstrup retraced the main stages of the lead ban achieved in Denmark for all forms of hunting starting in 1996. Replacing lead has brought only benefits, and young Danish hunters are astonished to learn that in Italy and many European countries it is not only still used but is strenuously defended as an irreplaceable material for successful hunting.

Here, in fact, despite initial fears and doubts, the transition to alternative ammunition occurred without particular difficulty and without a decrease in the number of hunters or animals shot.

Roberto Viganò's speech, which reported the preliminary results of an online questionnaire released last June and completed by 582 Italian hunters, was also of great interest.

Among the most important findings is the fact that, even today, many hunters consider lead to be the best material for ensuring rapid, precise and ethically acceptable kills, although many selective ungulate hunters report only positive experiences from having used alternative bullets (mainly made of copper).

They appreciate its reduced dispersion of fragments, when compared to lead ammunition which disperses hundreds of micro-splinters in the game's flesh, and also the high accuracy of the shot.

In essence, it's curious to observe that non-toxic ammunition is considered effective by those who use it and ineffective by those who oppose it. This logical paradox demonstrates how the issue is ideological, almost identity-based, for Italian hunters, whom Viganò defines as "cognitive conservationists." He notes that regulations can ban lead, but only through hunter education can change be achieved. This change must come from the bottom up, in line with Kanstrup's recommendations, which suggest involving individual hunters rather than hunting associations, which often serve other interests.

Also, prominent and international was the presentation by José Pedro Tavares, director of the Vulture Conservation Foundation, which has been committed to vulture conservation in Europe, North Africa, and the Middle East for years. The Portuguese speaker highlighted how, for some time now, the main European LIFE projects aimed at creating and maintaining viable vulture populations have made it essential to address the issue of lead ammunition through specific hunter engagement initiatives, such as testing the use of alternative ammunition, providing non-toxic ammunition to encourage its use, and conducting training and awareness-raising sessions for hunters and other stakeholders.

In Italy (Sardinia), France (Corsica, Grands Causses and the Alps), Portugal, Croatia, Slovenia and Bulgaria, numerous experimental and demonstration projects have already been launched, and partly completed, to test the effectiveness of alternative ammunition and create a climate of general acceptance and consensus among hunters, which is essential for definitively overcoming mistrust towards them and building a lasting conservation effort for the benefit of biodiversity and public health.

Bolesław Słociński, manager of the BIOM Association's "Safe Flyways" program, delivered a particularly insightful presentation. He outlined the numerous and comprehensive efforts to combat lead in Croatia. Here, 64.7% of 17 griffon vultures analyzed showed clinical and subclinical levels of lead exposure. BIOM's strategy, in addition to continuing its lead research, is to promote training for hunters and support political initiatives aimed at institutions to promote compliance with the recent ban on lead shot in European wetlands, with a view to achieving a complete ban on lead ammunition in the coming years.

The conference concluded with a speech by host Dario Colombi, an official from the Friuli Venezia Giulia Region's Hunting and Fisheries Service, who outlined the initial measures his administration has already implemented to combat the use of lead ammunition in the region and to protect the only breeding population in Northern Italy and the northernmost in Europe of Griffon Vulture.

The day after the conference, participants had the opportunity to visit the Cornino Lake Regional Nature Reserve, observing dozens of griffon vultures in the wild, and to learn more, thanks to presentations by numerous European experts, about the results achieved by vulture conservation and reintroduction efforts in several European countries.

In the afternoon, introduced by speeches by Stefano Santi, Director of the Julian Prealps Nature Park, and Paolo Pantini of the Bergamo Museum of Natural Sciences, co-curator of the exhibition "The Poison after the Shot," Gloria Ramello and Enrico Bassi led visitors on a discovery of the subtle and lethal effects of lead poisoning on Italian and European birdlife.

The initiative, which represents the first thematic exhibition in Italy, was strongly supported by the Julian Prealps Nature Park, and was hosted in the exhibition halls of Palazzo Orgnani-Martina in Venzone (UD) with the concrete collaboration of the Tarvisio Hunting District represented by President Mario Agnola.

Anna Micelli, President of the Julian Prealps Nature Park, expressed great satisfaction with the conference and exhibition, stating: "These initiatives are crucial in informing and raising awareness among stakeholders, leading to hunting activities that are increasingly attentive to environmental and human health protection. In this sense, collaboration with the hunting community is not only strategic but also essential to a successful outcome. I must therefore thank the organizers and the Tarvisio Hunting District for their collaboration".

### Conclusions and outcomes achieved

At the end of the conference, a symbolic award was presented to three of the speakers present, who for professional reasons are particularly close to the hunting world (Matteo Brogi, Dario Colombi and Roberto Viganò), by the board of the Vulture Conservation Foundation: Fulvio Genero, Enrico Bassi and Raphael Neouze (members of the Advisory and Management Board of the VCF).

The conservationists presented them with commemorative pins depicting the silhouettes of European vulture species, first introducing their biological and behavioural characteristics that expose them to the risk of lead poisoning, then emphasizing the quality and quantity of actions needed in Italy and Europe to protect these precious birds, emblems of an ancient ecosystem under severe stress.

The three award winners were asked to actively participate in the change in the hunting world and to act as ambassadors, spreading the message that lead-free hunting is not only possible but must be implemented as quickly as possible to ensure greater survival for the most threatened species, helping to stop the massive lead release that pollutes natural environments, and supporting the protection of human health, which continues to be exposed to the risk of contamination through the consumption of game meat.

In short, no longer "winking" at the more backward and conservative hunting political world, but "opening our eyes" to a new and urgent reality that, with "lead-free" hunting, offers in exchange human health, protection of beauty, and maintenance of the functionality of ecosystems, consequently also restoring greater dignity to those who practice hunting.

## RIASSUNTO

### Piombo, Veleno senza frontiere - Gorizia, 17-18 ottobre 2025.



Venerdì 17 e sabato 18 ottobre 2025 si è tenuto il primo Convegno internazionale svolto in Italia sugli effetti del piombo delle munizioni da caccia nei confronti degli uccelli selvatici, l'ambiente e la salute umana.

Il Convegno, organizzato da ASTORE FVG APS, col contributo economico del Consiglio regionale della Regione Friuli Venezia Giulia, del Parco Naturale delle Prealpi Giulie e della VCF (Vulture Conservation Foundation), è stato svolto grazie alla forte collaborazione offerta dal CISO (Centro Italiano Studi Ornitologici) e dalla Riserva Naturale Regionale Lago di Cornino. L'iniziativa si è inserita nell'ambito dell'evento “GO! 2025 Nova Gorica Gorizia capitale europea della cultura”.

Il Convegno è stato per la prima volta, in assoluto, patrocinato dalla SITOX Società Italiana di Tossicologia medica, a testimonianza di quanto il piombo delle munizioni sia ormai da considerarsi clinicamente pericoloso per la salute umana nonostante sia correntemente utilizzato e disperso negli ambienti durante l'esercizio dell'attività venatoria.

Nel corso del Convegno sono stati trattati gli effetti del piombo delle munizioni sulla fauna, sull'ambiente e sulla salute umana, secondo l'approccio “OneHealth” promosso dalle Autorità sanitarie internazionali.

Sono state illustrate le ragioni per cui è necessario un bando del piombo per le munizioni da caccia, che, a oggi, uccide per avvelenamento 2.300.000 uccelli/anno nei soli Paesi dell'UE e ne espone circa 150 milioni al rischio di intossicazione. Numeri impressionanti ma che non devono sorprendere se si pensa che, ogni anno, in Europa i cacciatori disperdono almeno 14.000 tonnellate di piombo.

Il piombo disperso nell'ambiente entra nelle catene alimentari di diverse specie di uccelli acquatici e terrestri, andando a influire sulla loro biologia e sopravvivenza. Son ben 18 i rapaci europei che si contaminano con il piombo. Dagli studi emerge quanto il piombo influisca pesantemente anche sui loro andamenti di popolazione.

I rapaci si espongono in maniera letale agli effetti dell'avvelenamento nutrendosi di visceri e carni contaminati da schegge di proiettili di piombo. In Italia, utilizzando solo le analisi complete di un pool di tessuti, la contaminazione arriva all'83% su scala nazionale (con valori dell'82% sulle Alpi e del 90% sugli Appennini).

Questo quadro tragico viene confermato in Friuli Venezia Giulia, dove utilizzando il sangue estratto da 76 grifoni catturati presso la stazione di alimentazione della Riserva Naturale Regionale Lago di Cornino (UD), la percentuale di rapaci contaminati è risultata pari al 19% nel 2019 e del 64% nel 2023.

Il tema della sicurezza alimentare è stato ampiamente approfondito evidenziando quanto la normativa sia del tutto carente nel definire una soglia di sicurezza dei livelli di piombo nella carne di selvaggina, al contrario dei rigidi protocolli riguardanti la carne di allevamento.

Il piombo è tossico per contatto, inalazione e ingestione ed è molto pericoloso per la salute umana anche a basso dosaggio, come accade solitamente tramite l'assunzione di carne di selvaggina. Rappresenta a tutti gli effetti un killer silenzioso, associato a un incremento del rischio di patologie cardiovascolari (infarto, ipertensione e altre patologie cardiache).

L'ECHA, ripercorrendo le tappe del recente passato, ha sottolineato come la caccia senza piombo sia tecnicamente possibile, economicamente accessibile e più sicura per la salute umana e l'ambiente.

I cacciatori debbono consapevolmente scegliere le munizioni atossiche per proteggere ambiente, fauna e salute umana dei propri familiari, degli acquirenti e dei consumatori. Questa scelta potrebbe altresì contribuire a migliorare il livello di accettazione della caccia da parte dell'opinione pubblica.

Le munizioni alternative non sono tossiche, non aumentano gli incidenti di caccia e la loro efficacia dipende dalla qualità del tiratore e non dal metallo impiegato. La sostituzione del piombo in Danimarca, primo Paese EU a vietare completamente l'uso del piombo in tutte le forme di caccia, ha portato solo benefici.

Sebbene numerosi cacciatori di selezione degli ungulati raccontino solo esperienze positive dall'aver utilizzato proiettili alternativi (costituiti principalmente da rame), ancora oggi, molti cacciatori ritengono il piombo come il miglior materiale per garantire abbattimenti rapidi e precisi ed eticamente accettabili.

L'attivazione di specifiche azioni di coinvolgimento dei cacciatori risulta quindi necessaria per arrivare al divieto del piombo, tramite test di utilizzo di munizioni alternative, cessione di munizioni atossiche per incentivarne l'uso e incontri formativi e di sensibilizzazione.

Il giorno successivo al Convegno, i partecipanti hanno avuto l'opportunità di visitare la Riserva Naturale Regionale Lago di Cornino, osservando allo stato selvatico decine di grifoni e di approfondire, grazie alle esposizioni di numerosi esperti europei, i risultati conseguiti dalle azioni di conservazione e di reintroduzione degli avvoltoi in diversi Paesi europei.

Nel pomeriggio, introdotti dagli interventi di Stefano Santi, Direttore del Parco Naturale Prealpi Giulie e da Paolo Pantini del Museo di Scienze Naturali di Bergamo co-curatore della mostra “Il Veleno dopo lo Sparo”, Gloria Ramello ed Enrico Bassi, i partecipanti sono stati accompagnati alla scoperta della mostra.

L'iniziativa è stata fortemente voluta dal Parco Naturale delle Prealpi Giulie, ed è stata ospitata presso le sale espositive del Palazzo Orgnani-Martina di Venzone (UD) con la collaborazione concreta del Distretto Venatorio Tarvisiano nella persona del Presidente Mario Agnola.

**You can see the conference here**

**Puoi vedere tutta la conferenza qui:**

<https://www.astorefgv.org/news/117/33/PIOMBO-VELENO-SENZA-FRONTIERE-LEAD-A-BORDERLESS-POISON.html> and <https://www.parcoprealpigiulie.it/it/>



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The Natural Science Museum of Bergamo has created a page in its website, entirely dedicated to the Saturnism. ([www.museoscienzebergamo.it/ricerca/saturnism](http://www.museoscienzebergamo.it/ricerca/saturnism)) Il sito del Museo Civico di Scienze Naturali “E. Caffi” di Bergamo, interamente dedicato al Saturnismo ([www.museoscienzebergamo.it/ricerca/saturnism](http://www.museoscienzebergamo.it/ricerca/saturnism)).



# National Action Plan for the Bearded Vulture in France (2025-2034)



**Clement Ganier & Pascal Orabi**

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Bearded Vulture (*Gypaetus barbatus*) from the subspecies *barbatus* has a wide distribution associated with major mountainous regions of Europe, Middle East, North Africa, and Asia. Once present throughout various mountain ranges in southern and central Europe, as well as on several Mediterranean islands, it was eradicated from most of these areas and, by the 1980s, survived only in three strongholds: Crete, Corsica, and the Pyrenees. Intensive conservation and reintroduction programs have led to the species' return to Western Europe, with current territorial pairs estimated at around 460 (including Turkey and Morocco). The IUCN Red List classifies it as "Vulnerable" at the level of the European Union, but "Endangered" within the Mediterranean basin and in France.

France bears significant responsibility for the conservation of the Bearded Vulture, hosting the second largest population after Spain, with 92 territorial pairs recorded in 2024, breeding across the Alps, the Massif Central, the Pyrenees, and Corsica.

Monitored since the late 1970s, the species has mobilized a broad network of conservation stakeholders, with diverse profiles: NGOs, public institutions, local authorities, research organizations, electricity network managers, sports federations, and more. The first National Action Plan (PNA) was implemented from 2010 to 2020, reinforcing the positive trend for the Bearded Vulture. Given its slow reproductive strategy and continued exposure to significant threats, the species remains fragile. The French Ministry for Ecological Transition has therefore initiated a second plan to continue and strengthen these efforts.

Coordinated by DREAL Nouvelle-Aquitaine and LPO France, the drafting of this second PNA brought together over 50 stakeholders involved in the species' conservation, representing nearly 30 different organizations from France and across Europe.

Set to be implemented over the next 10 years, the second PNA aims to increase the number of territorial pairs by 42% by 2035, and to expand the species' distribution across the four French mountain ranges. To achieve these long-term goals, the following strategy has been defined for the 2026-2035 period:

- continue monitoring efforts to track population development and demographic parameters, in line with identified scientific questions, and adapt conservation measures accordingly;
- ensure the viability and proper functioning of the French metapopulation by reconnecting current population cores and promoting recolonization throughout the species' biogeographical range;
- promote access to high-quality, diverse, and year-round food resources, both wild and domestic;
- reduce and prevent anthropogenic mortality risks related to overhead wires, poisoning, shooting, and wind turbines, as well as risks of disturbance in vital areas and breeding sites;
- raise public awareness of the species and encourage broad ownership of its conservation challenges;
- coordinate the action plan, integrate it into public policies, and promote cooperation and synergy with other PNA and neighboring countries.

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## RIASSUNTO

### Il Piano di Azione nazionale per la conservazione del Gipeto in Francia (2025-2034)

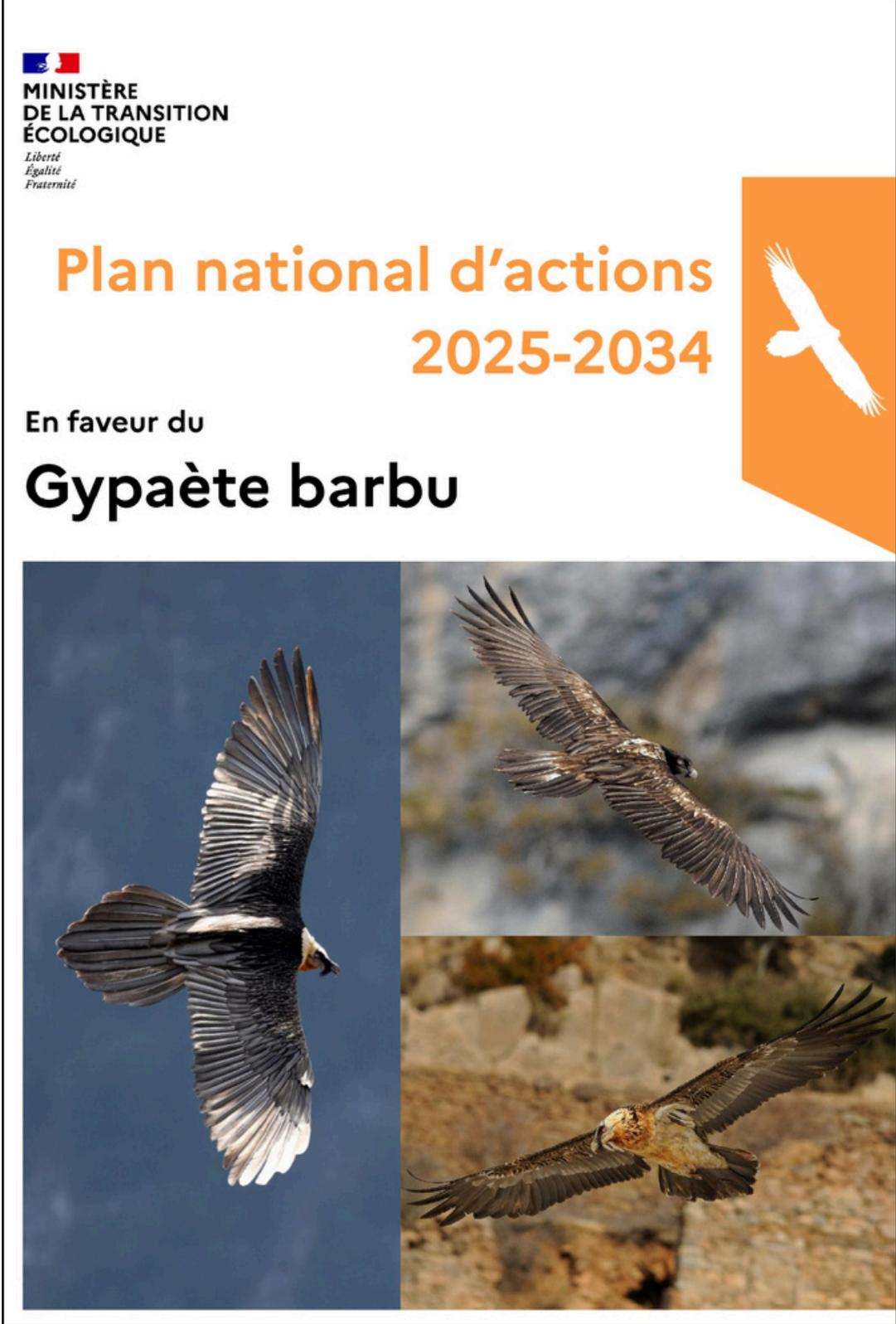


Un tempo presente in diverse catene montuose dell'Europa meridionale e centrale e in diverse isole del Mediterraneo, il Gipeto è stato eradicato dalla maggior parte di queste aree e, negli anni '80, sopravviveva solo in tre roccaforti: Creta, Corsica e Pirenei. La Lista Rossa IUCN lo classifica come "Vulnerabile" a livello dell'Unione Europea, ma "In pericolo" nel bacino del Mediterraneo e in Francia.

In Francia è presente la seconda popolazione europea (dopo la Spagna) per numero di coppie territoriali (92 nel 2024), distribuite tra Massiccio Centrale, Alpi, Pirenei e Corsica.

Il primo Piano Nazionale d'Azione, attuato dal 2010 al 2020, ha rafforzato il trend positivo per la specie grazie al coinvolgimento di un'ampia rete di soggetti interessati alla conservazione: ONG, istituzioni pubbliche, enti locali e di ricerca, gestori di reti elettriche, federazioni sportive e altri.

Data la perdurante presenza di minacce, il Ministero francese per la Transizione Ecologica ha avviato la stesura di un secondo Piano Nazionale d'Azione, sotto il coordinamento della LPO e della DREAL Nouvelle-Aquitaine, in collaborazione con oltre 50 partner francesi ed europei. Questo Piano, la cui attuazione è prevista per il periodo 2026-2035, ha come principali obiettivi per i prossimi 10 anni l'aumento del 42% del numero di coppie territoriali presenti e l'espansione della specie nelle quattro catene montuose nazionali. Per il loro raggiungimento, è prevista la continuazione delle attività di monitoraggio della specie, la redazione di misure di conservazione specifiche, la riduzione delle principali minacce e fonti di disturbo, la sensibilizzazione e il coinvolgimento dell'opinione pubblica.



  
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# Plan national d'actions 2025-2034

En faveur du  
**Gypaète barbu**



# A Fateful Encounter in the Pyrenees



## Hans Frey

Scientific Director of the Owls and Birds of Prey Center Haringsee and Richard Faust Bartgeier Zuchtzentrum (RFZ) - e-mail: h.frey@4vultures.org

Extracted from Weyrich *et al.*, 2021, p.112-113 "Der Bartgeier: Seine erfolgreiche Wiederansiedelung in den Alpen".

### Foreword

Hans Frey is one of the founders of the Bearded Vulture Project. The professor of veterinary medicine, who worked at the University of Veterinary Medicine Vienna until 2010, played a pivotal role, particularly in the further development of the breeding method and the establishment of the breeding stock. He still manages the Breeding Center at the Owl and Bird of Prey Station in Haringsee near Vienna (Austria).

Actually, I was practically - and initially reluctantly - pushed into the world of this bird. That was in the early 1970s. My longtime friend, Winfried Walter, an engineer and former managing director of WWF Austria, was a vulture enthusiast. He took me to the Pyrenees. The rest was taken care of by an adult Bearded Vulture that came very close to us and curiously inspected us.

Almost simultaneously, the first successful breeding attempts with Bearded Vultures took place at the Innsbruck Alpine Zoo under its founder and director, Hans Psenner. Winfried's idea was to acquire the young birds hatched here, house them in the owl and raptor Station I had established in Haringsee, and develop a breeding program in cooperation with zoos. At the 1975 World Conference on Birds of Prey in Vienna, Hans Psenner reported on his breeding successes, which attracted worldwide attention. Impressed by this, a private meeting took place with Martin Bijleveld, a raptor expert with the IUCN (International Union for Conservation of Nature), who was immediately won over to Winfried's idea. In 1976, we visited Hans Psenner to propose a breeding project with a central station and in cooperation with European zoos. We were welcomed with open arms. With his help, the zoo populations were assessed. In 1976, the first Bearded Vultures, two males, arrived in Haringsee. With the support of the Frankfurt Zoological Society, especially its director Richard Faust, as well as numerous volunteers, the necessary aviaries were built within a short time. From 1979 onwards, we were able to acquire bearded vultures from various zoos. The Center in Haringsee was named the Vienna Breeding Unit. I owe significant assistance in the construction of the aviaries to my long-time friend Jozeph Mihok. It was now possible to establish breeding pairs after determining the sex. By 1986, we already had a breeding stock that allowed us to release young birds annually. The extensive experience of the Innsbruck Alpine Zoo in keeping and breeding Bearded Vultures proved invaluable. The time leading up to the first releases was also used to develop release methods. This was achieved with the help of the numerous juvenile birds of various raptor and owl species that we took in for care, and also specifically with the model species, the Black Kite.

In 1985, I found a suitable niche for releasing young vultures in the Rauris Kruml - valley in the Hohe Tauern National Park as part of a pilot study. The first four birds were released there in 1986. Releases continued successfully there for many years. The monitoring was carried out by students and experienced staff of the Center, most notably my long-time colleague Karl Hofbauer, the biologist Nina Callies, and of course my doctoral students Alex Llopis Dell and Knuth Niebuhr. They then shared their knowledge with other release sites in other Alpine countries. From 1993 to 2006, I attempted to facilitate communication within the large circle of Bearded Vulture enthusiasts by publishing the Bearded Vulture Annual Report, initially for a short time with the help of Johanna Kurzweil, and then for many years with my colleague Gabriele Schaden. My responsibilities also included maintaining the studbook, exchanging information with partners in other breeding centers and zoos, managing foster care, and distributing the offspring to the release sites or partners in the breeding network. This function was gradually shared with Alex Llopis Dell and finally taken over entirely by him in 2017. My work at the University of Wien ended in 2010, and since then, my focus - supported by my wife Sigrid, Karl Hofbauer, and, since 2021, Kathrin Heissenberger - has been on the breeding center in Haringsee, which now bears the name Richard Faust Bearded Vulture Breeding Center in recognition of the unparalleled, long-term financial support from the Zoological Society of Frankfurt am Main.

I am also deeply grateful to my former institute director, teacher, and role model, Rudolf Supperer, who enabled me to combine my profession and my calling and to meet and come to know so many people who whole heartedly pursue a common goal.

### Un incontro fatale nei Pirenei



#### Premessa

Hans Frey è uno dei fondatori del Progetto di reintroduzione internazionale del Gipeto. Professore di Medicina Veterinaria presso l'Università di Vienna fino al 2010, ha svolto un ruolo fondamentale per tutte le fasi del progetto, in particolare nello sviluppo del metodo di allevamento e nella costituzione dello stock della popolazione riproduttiva *ex situ*. Gestisce ancora oggi il Centro di riproduzione presso la Stazione Gufi e Rapaci di Haringsee, vicino a Vienna in Austria.

Confesso che sono stato praticamente - e all'inizio con riluttanza - trascinato nel mondo di questo avvoltoio. Erano i primi Anni '70. Il mio amico di lunga data, Winfried Walter, ingegnere ed ex Direttore generale del WWF Austria, era un appassionato di avvoltoi. Mi portò sui Pirenei per osservarli. Il resto fu merito di un Gipeto adulto che avvicinandosi molto a noi, ci ha osservato con curiosità.

Quasi contemporaneamente, ebbero luogo i primi tentativi di riproduzione con successo con i gipeti custoditi nello Zoo Alpino di Innsbruck (A), sotto la guida del suo fondatore e Direttore, Hans Psenner. L'idea di Winfried era di acquisire i giovani uccelli nati qui, ospitarli nella Stazione di gufi e rapaci che avevo allestito a Haringsee (A) e sviluppare un programma di riproduzione in collaborazione con gli zoo.

Alla Conferenza Mondiale sui Rapaci del 1975 a Vienna, Hans Psenner riferì dei suoi successi riproduttivi, che attirarono l'attenzione di tutto il mondo. Colpito da ciò, ebbe luogo un incontro privato con Martin Bijleveld, un esperto di rapaci della IUCN (Unione Internazionale per la Conservazione della Natura), che fu immediatamente convinto dell'idea di Winfried. Nel 1976, andammo a trovare Hans Psenner per proporgli un progetto di riproduzione *ex situ* con una stazione centrale di riferimento e con la collaborazione degli zoo europei. Fummo accolti a braccia aperte. Con il suo aiuto, gli individui dei vari zoo furono sottoposti a una prima valutazione. Nel 1976, i primi gipeti, due maschi, arrivarono a Haringsee.

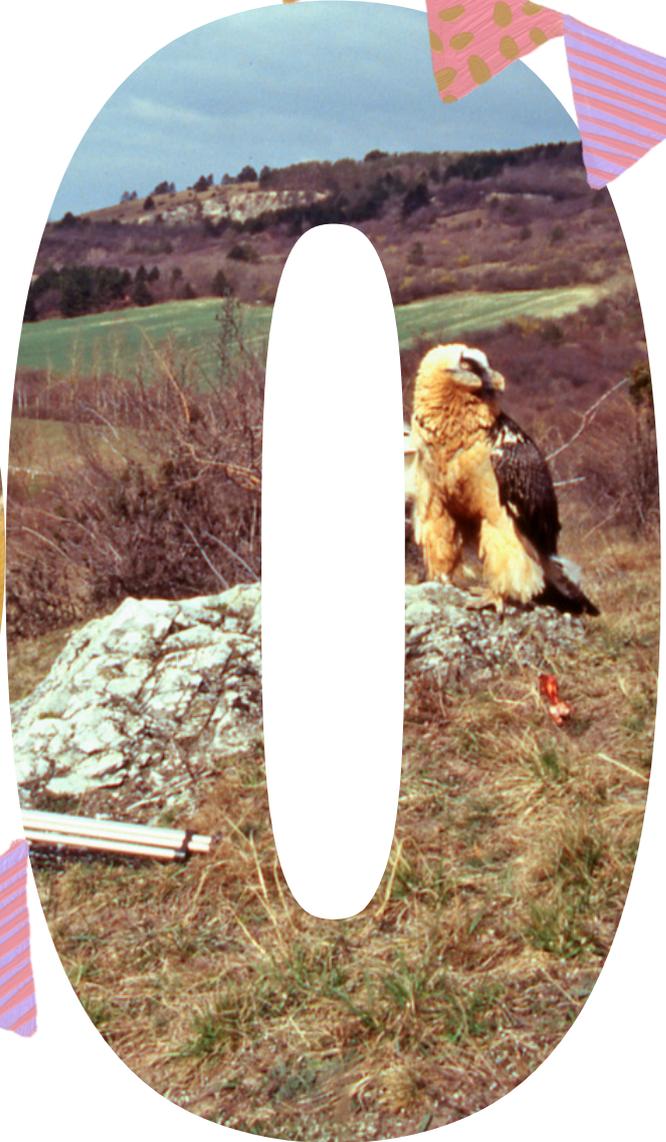
Con il supporto della Società Zoologica di Francoforte, in particolare del suo Direttore Richard Faust, e di numerosi volontari, le voliere necessarie furono costruite in breve tempo. Dal 1979 in poi, potemmo acquisire gipeti da diversi zoo. Il Centro di Haringsee fu denominato Unità di Allevamento di Vienna. Devo un contributo significativo alla costruzione delle voliere al mio amico di lunga data Jozeph Mihok.

Dopo aver determinato il sesso, era ora possibile stabilire le prime coppie riproduttive. Già nel 1986 avevamo una popolazione riproduttiva che ci permetteva di rilasciare giovani uccelli ogni anno. La vasta esperienza dello Zoo Alpino di Innsbruck nell'allevamento e, in particolare, nell'allevamento dei gipeti si è rivelata preziosa. Il tempo trascorso prima dei primi rilasci è stato utilizzato anche per sviluppare i metodi di reintroduzione. Questo è stato possibile grazie ai numerosi giovani uccelli di diverse specie di rapaci e gufi che abbiamo accolto per le nostre cure e, in particolare, con la specie modello rappresentata dal Nibbio bruno.

Nel 1985, ho trovato una nicchia di roccia adatta per il rilascio dei giovani gipeti nella Valle di Rauris Kruml, nel Parco Nazionale degli Alti Tauri, nell'ambito di uno studio pilota. I primi quattro uccelli del progetto di reintroduzione furono rilasciati lì, nel 1986. I rilasci sono proseguiti con successo per molti anni. Il monitoraggio è stato effettuato da studenti e personale esperto del Centro, in particolare dal mio collega di lunga data Karl Hofbauer, dalla biologa Nina Callies e, naturalmente, dai miei dottorandi Alex Llopis Dell e Knuth Niebuhr. Loro hanno poi condiviso le loro conoscenze con altri siti di rilascio negli altri Paesi alpini.

Dal 1993 al 2006, ho cercato di facilitare la comunicazione all'interno della vasta cerchia degli appassionati di gipeti pubblicando il Rapporto Annuale sul Gipeto, inizialmente per un breve periodo con l'aiuto di Johanna Kurzweil e poi, per molti anni, con la mia collega Gabriele Schaden. Le mie responsabilità includevano anche la gestione del registro genealogico, lo scambio di informazioni con i partner di altri centri di riproduzione e zoo, la gestione dell'affidamento e la distribuzione dei giovani ai siti di rilascio o ai partner internazionali della rete di riproduzione. Questa funzione è stata gradualmente condivisa con Alex Llopis Dell e infine assunta interamente da lui nel 2017. Il mio lavoro all'Università di Vienna si è concluso nel 2010 e, da allora, la mia attenzione, supportata da mia moglie Sigrid, Karl Hofbauer e, dal 2021, Kathrin Heissenberger, si è concentrata sul centro di riproduzione di Haringsee, che ora porta il nome di Richard Faust Bearded Vulture Breeding Center, come riconoscimento all'ineguagliabile e pluriennale sostegno finanziario ricevuto dalla Società Zoologica di Francoforte sul Meno.

Sono profondamente grato anche al mio ex Direttore d'istituto, insegnante e modello di vita, Rudolf Supperer, che mi ha permesso di coniugare la mia professione e la mia vocazione e di incontrare e conoscere così tante persone che perseguono con tutto il cuore un obiettivo comune.



**Years  
of  
Memories**



**When everything was hardly any simpler - Quando era tutto difficilmente più semplice**



**1984 - Ayse in Savoy (France).** Ayse in Alta Savoia (Francia).



**1987 - First release in Savoy (France).** Primo rilascio in Savoia (Francia).



**1986 - First release in the Alps (Austria).** From the left: Karl Hofbauer, Kurt Kirchberger and Karl Heinz. Primo rilascio sulle Alpi (Austria). Da sinistra: Karl Hofbauer, Kurt Kirchberger e Karl Heinz.



**1986 - First release in the Alps (Austria).** Primo rilascio sulle Alpi (Austria).



**1987 - First release Bargy High Savoy (France) with Paul Géroutet.** Primo rilascio a Bargy in Alta Savoia (Francia) con Paul Géroutet.



**1986 - "Mr. President", the famous imprinted male paired with Hans. It was a male with physical troubles released together with the first 3 nestlings (25/05/1986). The goal was to protect the nestlings against potential predators.** "Mr. President", il famoso maschio improntato che faceva coppia con Hans. L'adulto presentava problemi fisici e veniva sperimentalmente utilizzato nei primi anni del progetto nelle cavità nido a protezione dei giovani rilasciati da possibili predatori.

## From "Mr. President" to Prince Philip, Duke of Edinburgh Da "Mr. President" al Principe Filippo, Duca di Edimburgo



15<sup>th</sup> March 1994 - Adoption of BG213 "Mr. President" paired with Hans. To encourage "Mr. President" to take care of the chick, Hans replace one egg (2) with BG213 (3) and then turn his back on waiting for a positive signal (4). The event has been filmed by a special video maker: Michel Terrasse. 15 Marzo 1994 - Adozione di BG213 da parte di "Mr. President" con Hans. Per incoraggiare "Mr. President" a prendersi cura del pulcino, Hans scambia l'uovo che stava covando (2) con BG213 (3) per poi girarsi di schiena in attesa di un riscontro positivo (4). Tutta la scena viene filmata da un video maker d'eccezione: Michel Terrasse.



Prince Philip met his majesty "Mr. President" during his visit to the Richard Faust Zentrum in Haringsee (Austria). Il Principe Filippo incontra sua maestà "Mr. President" durante una visita al Richard Faust Zentrum ad Haringsee (Austria).

## Travelling across the Alps Viaggiando sulle Alpi



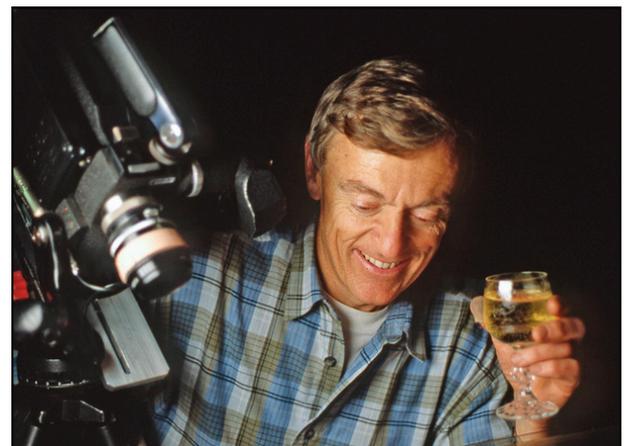
**1991 - First release in Switzerland (Stabelchod). From the left: Alex Llopis, Karl Hofbauer and Hans.** Primo rilascio in Svizzera (Stabelchod). Da sinistra: Alex Llopis, Karl Hofbauer e Hans.



**Hans with Enrico Bassi is showing the first handmade egg tester used for the international reintroduction project, at the “20 years of Bearded Vulture in Italy after the extinction” Symposium. In the background, Francesco Framarin, the former Director of Gran Paradiso National Park.** Hans con Enrico Bassi mostra al Convegno “20 anni di Gipeto in Italia, dopo l'estinzione”, uno sperauovo artigianale usato per molti anni nel progetto internazionale di reintroduzione del Gipeto. Sullo sfondo, Francesco Framarin, ex Direttore del Parco Nazionale del Gran Paradiso.



**Hans is using a fake remote control to light an artificial nest built with children of a primary school in the main square of Bormio to celebrate the “20 years of Bearded Vulture in Italy after the extinction” Symposium organised in Stelvio NP (16-18<sup>th</sup> March 2018).** Hans usa un finto telecomando per illuminare un nido artificiale costruito dai bambini delle scuole elementari di Bormio nella piazza centrale, per celebrare l'inizio del Convegno “20 anni di Gipeto in Italia dopo l'estinzione” (PN Stelvio, 16-18 marzo 2018).



**1994 - The passionate Michel Terrasse after the video making of “Mr. President” in the aviary.**

Un appassionato Michel Terrasse dopo le riprese a “Mr. President” nella voliera.



**2016 - Mittersill (Hohe Tauern, Austria). From the left: Ferdinand (Feri) Lainer, Hans, José Pedro Tavares and Daniel Hegglin.** Mittersill (Hohe Tauern, Austria). Da sinistra: Ferdinand (Feri) Lainer, Hans, José Pedro Tavares e Daniel Hegglin.

# Hans and the Bearded Vulture: a fifty-fifty partnership

## Hans e il Gipeto: un rapporto fifty-fifty



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Thanks to have kept the secret as well!

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Vorremmo ringraziare chi ha contribuito fornendoci le preziose foto storiche e le informazioni ad esse legate, usate per la redazione di questo numero speciale, dedicato ad Hans Frey.

Grazie anche per aver mantenuto segreta la vostra collaborazione!

Kathrin Heissenberger, Sigrid Frey-Kubka, Alex Llopis, Ilka Zimmer Champly, Fulvio Genero, Marie Heuret and Julien Heuret.

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