



The return of the “Bone-breaker”

25 years of reintroduction of Bearded vultures in the Alps

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Conservation Biology

→ **Conservation interventions:**

- 1) Translocation
- 2) Reinforcement
- 3) Conservation introduction
- 4) Reintroduction

→ **What?**

→ **Why?**

→ **When?**

→ **How?**

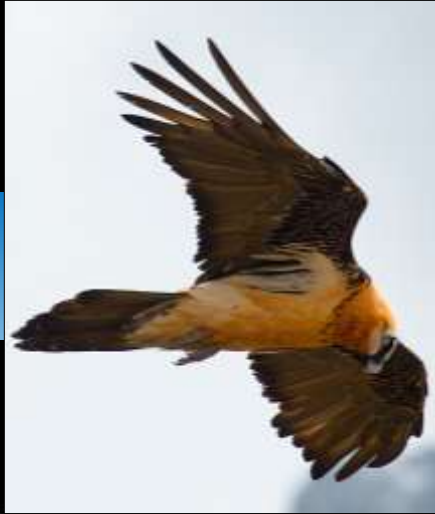
→ **Where?**



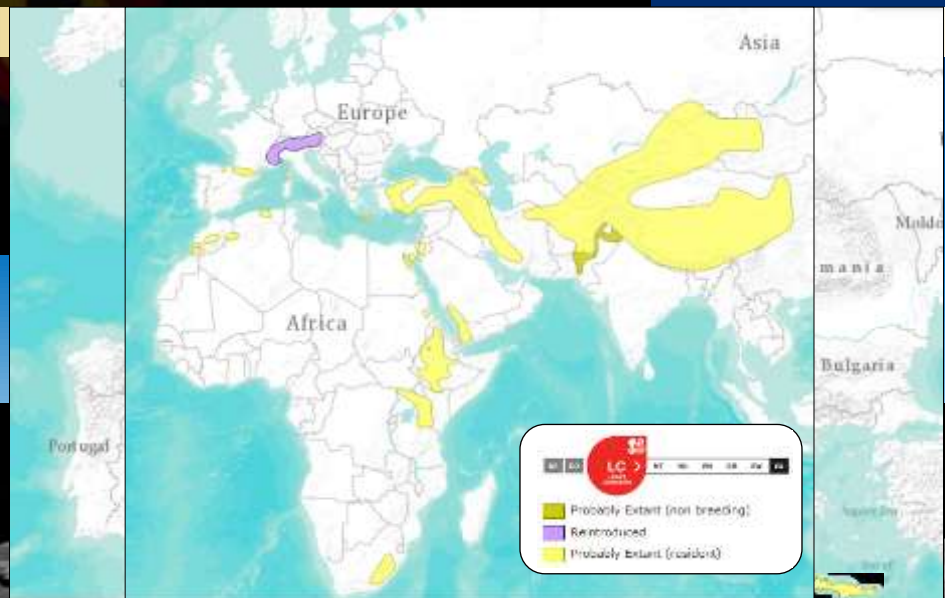
The Bearded vulture in the Alps

Generalities & distribution

- **Latin name:** *Gypaetus barbatus*
- **Size:** 94–125 cm; **Wspan:** 2.31–2.83 m
- **Diet:** 85-90% bones
- **Mating behaviour:** Monogamous
- **N° of offspring:** Max. 1 per year
- **Sexual maturity:** 7-8 years
- **Strong philopatric behaviour**



The Bearded vulture in the Alps



Reintroductions

What do we understand as reintroduction?

Release of an organism into an area that was **once part of its range** but from which it's been extirpated, with the main objective of re-establishing a **self-sustaining population** with a high probability of persistence with **minimal or no intervention**.



Reintroductions

Why should we do reintroductions?

Objectives to justify reintroductions:

- 1) Enhance long-term survival of the species
- 2) Re-establish a keystone species (in ecological or cultural sense)
- 3) Maintain or restore natural diversity
- 4) Provide long-term economic benefits (local or national)
- 5) Promote conservation awareness

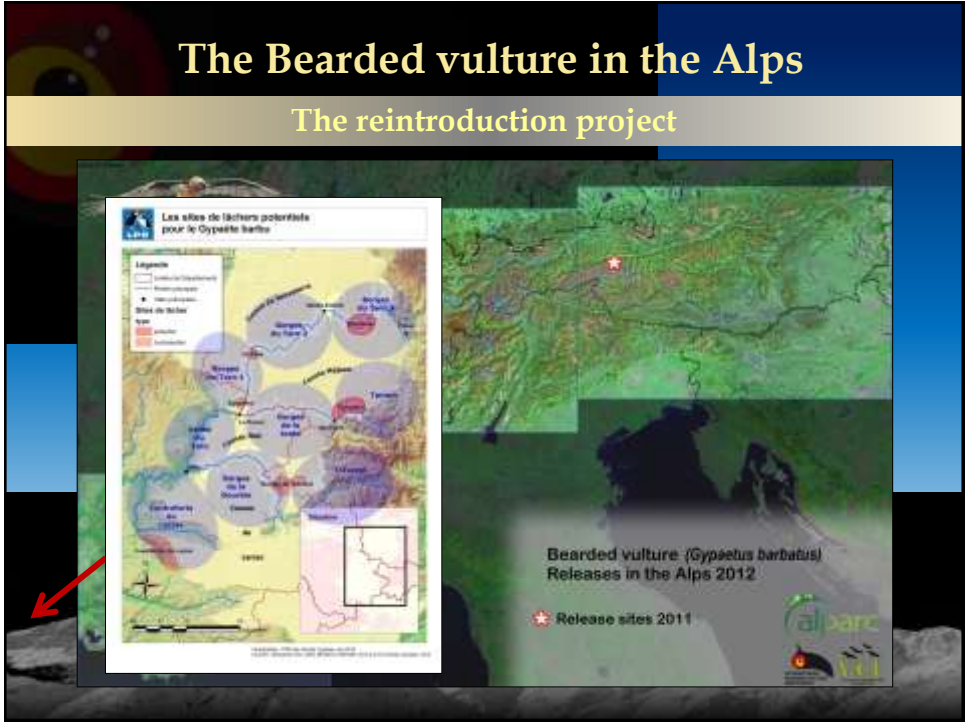


Is this enough?



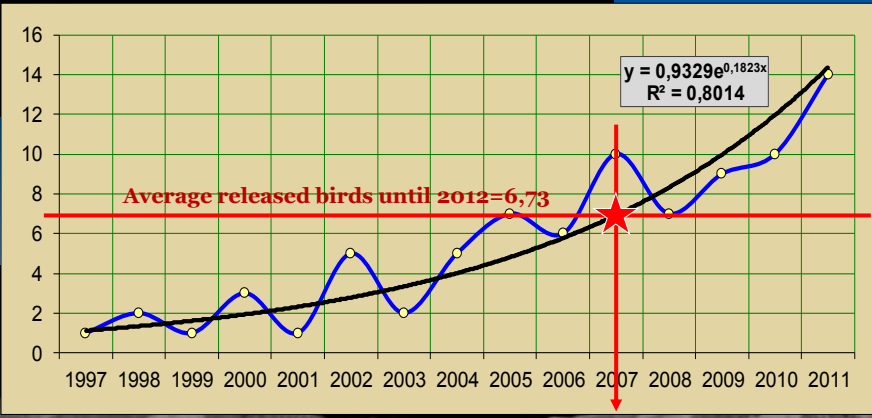
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The reintroduction project



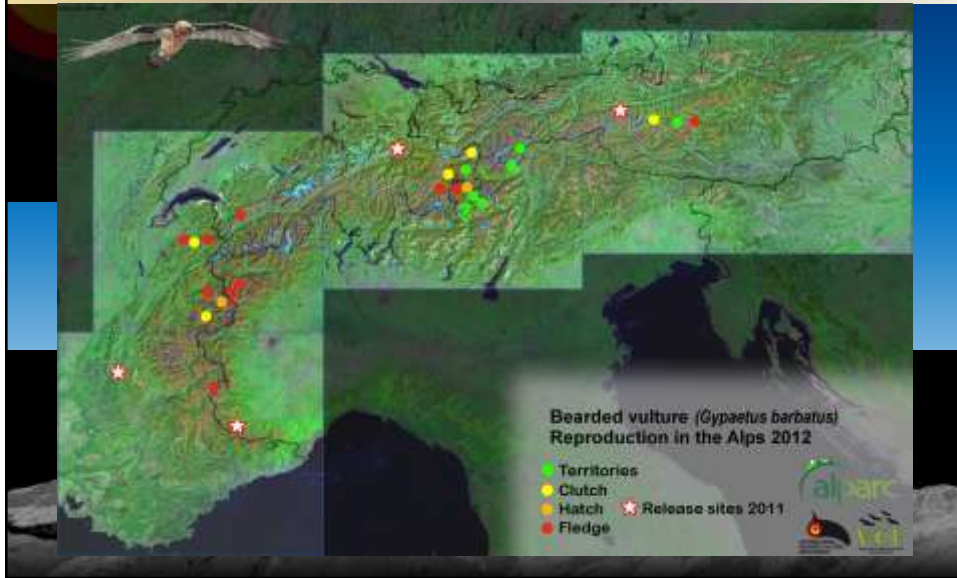
The Bearded vulture in the Alps

The reintroduction project



The Bearded vulture in the Alps

The reintroduction project



The Bearded vulture in the Alps

The reintroduction project

- 1978: It was decided to start a reintroduction in the Alps. The breeding network was created
- 1986: First release of captive-bred animals (Austria)
- 1997: First reproduction in the wild (France)
- Release sites: 5 areas (Austria, Italy, Switzerland and 2 in France)
- Released birds: 185 (up to 2012)
- Is it necessary to keep on releasing?



Reintroductions

When to end releases in a reintroduction project?

Reintroductions are expensive, so there is a constant strain to do just the necessary to insure survival. Therefore, the answer is: **when the project has been successful**

But what is a success?



Reintroductions

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→ Difference between demographic and genetic points of view
(Schaub et al. 2009)

→ Ecological function



Reintroductions

How to implement a reintroduction project?

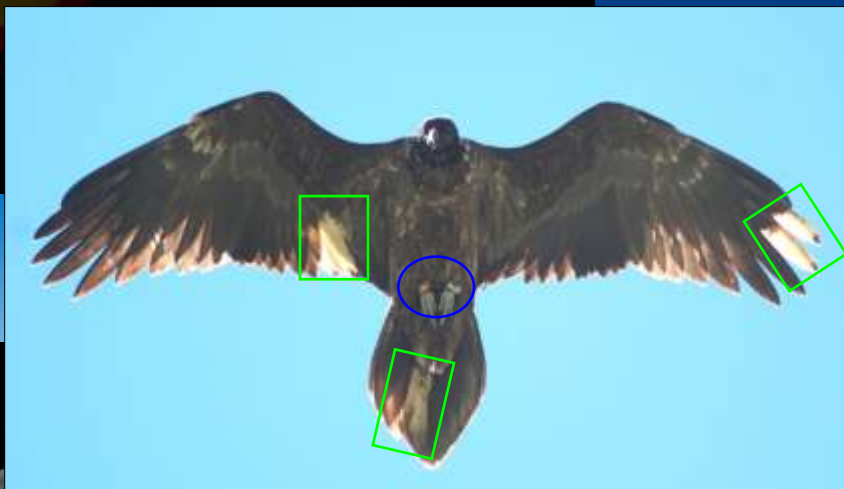
Pre-requisites:

- 1) Removal of the threads that led to the extinction
- 2) Availability of suitable habitat/food resource
- 3) Genetically suitable stock
- 4) Sufficient resources
- 5) Collaboration with local communities
- 6) Scientific background!!
- 7) **Post-release monitoring!!**



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Monitoring of the population: Marking



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Monitoring of the population: Satellite telemetry



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Monitoring of the population: Genetic monitoring

- **Estrict control of the breeding network**
- **Genetic fingerprint of all* released birds**
- **Difficult to get from wild-born birds**



Reintroductions

Where should we release the animals?

→ How big should the site be?

Therefore it's important to know:

- a) Availability of potential sites
- b) Connectivity among suitable sites (no barriers)

Carrying capacity of the system

Productive and potential (scientific basics!)

beyond L



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International collaboration



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Threads for the future



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Threads for the future



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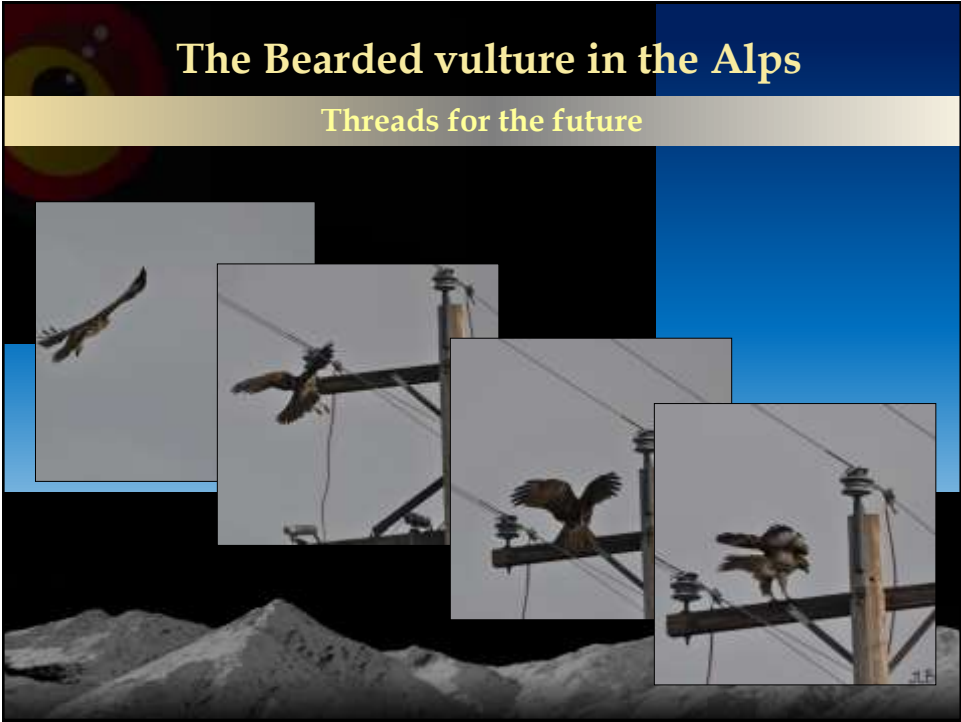
Threads for the future



The Bearded vulture in the Alps

Threads for the future





Thanks a lot for your attention!



alparco

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Images: Richard Bartz, JC Piques, Michel..., ..., Michael Knollseisen, Richard Zink,

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