How to handle genetic samples

- DNA from moulted feathers can be isolated from two parts of the feather shaft (see picture below published by Horvàth et al. (2005) Journal of Avian Biology). Therefore feathers sent in for genetic analysis need to have at least one of these parts still intact.

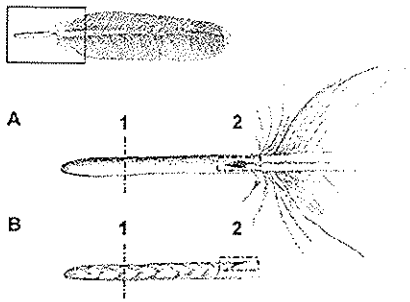


Fig. 1. General view of a typical flight feather: (A) detail of a posterior view of the base of the feather, and (B) longitudinal cross-section through the feather calamus. Two different sampling areas for feathers are shown: (1) basal tip of the calamus and (2) blood clot from the superior umbilicus.

- Air-dry wet feathers and egg skins. Do not store them wet.
- Place feathers in an envelope or zipper bag.
- Store samples at room temperature in the dark.
- Label the samples clearly with date and place of collection.
- Send them to:

ecogenics GmbH
Wagistrasse 23
CH-8952 Zurich-Schlieren
Switzerland

November 2005

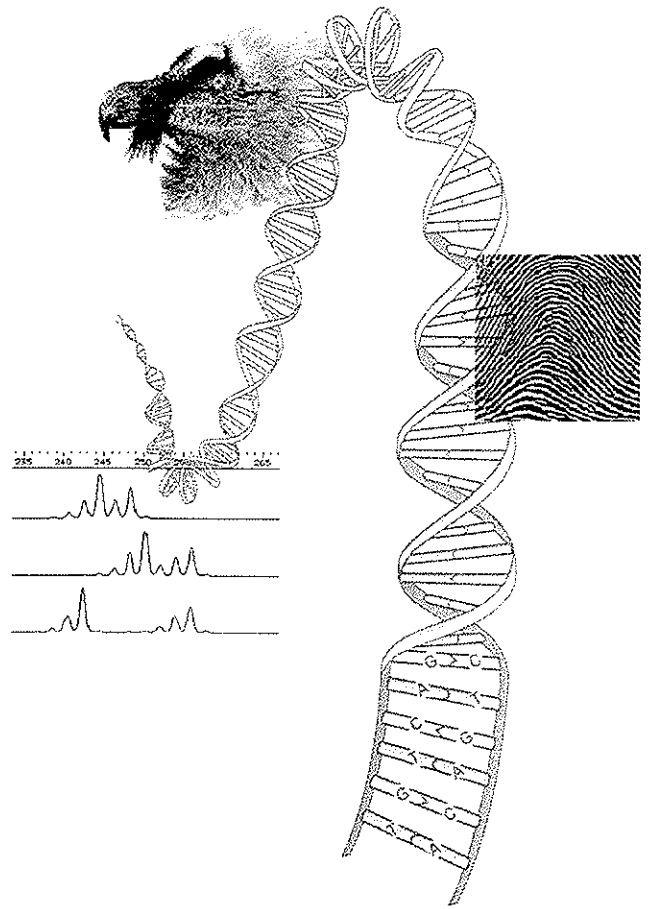
Genetic monitoring of the Bearded Vulture

Contact Address:

Dr. Barbara Hefti-Gautschi
ecogenics GmbH
Wagistrasse 23
CH-8952 Zurich-Schlieren
Switzerland

Tel & Fax ++41 43 495 04 74
info@ecogenics.ch

www.ecogenics.ch



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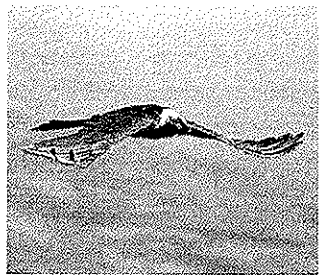
we enrich your research.

The aims of the genetic monitoring

The genetic monitoring of the captive and the released bearded vulture populations are very important for the future of the re-introduction project.

Only a genetic monitoring will allow:

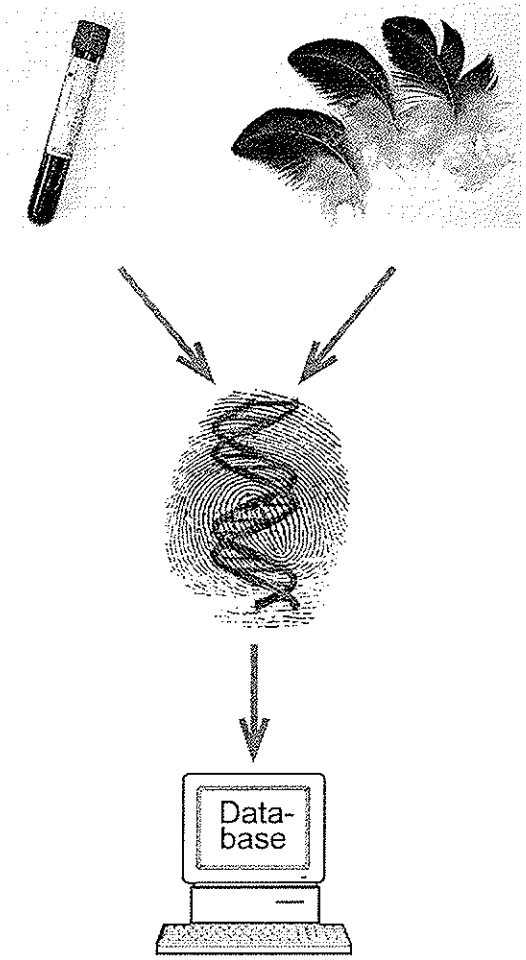
- the identification of individuals in the field based on a single feather.
- to identify which birds form a pair or trio.
- to follow birds hatched in the wild.
- to determine the sex-ratio of the newly established population in the Alps.
- to monitor the loss of genetic variation over time.
- to detect migration between the newly established population in the Alps and neighbouring natural populations.



How the genetic monitoring is done

The genetic monitoring is based on DNA samples collected from birds living in captivity and in the wild.

All samples are analysed in the ecogenics laboratories, and for each bird an individual genetic fingerprint is determined. These fingerprints are saved in a database. If a feather is found in the field, its genetic fingerprint is compared with the database and the individual can be determined.



Your contribution is very valuable!

The genetic monitoring can only be done with the help of collaborators collecting feathers or egg skins in the field. Your contribution is therefore very important!

You can help the genetic monitoring by making sure that:

- from every bird released, a blood sample is kept for determining the genetic fingerprint.
- from each known pair in the field feather samples are collected at their nest or resting site.
- after each breeding event in the field, the nest site is visited to collect feathers or egg skins.

The larger and the fresher the feathers the better the results!

DNA in moulted feathers degrades over time. The older the feather, and the longer they were exposed to UV-light and moisture the more difficult it is to determine their genetic fingerprint. Best results are obtained from fresh and large feathers. It is best to keep the feathers dry and store them in the dark.

Samples from egg skins are a very good source of DNA if they contain remains of blood vessels. Moist egg skin samples are best air-dyed and then stored at room temperature in the dark.

No DNA can be isolated from bearded vulture faeces.