



What to do with a dead goose – protocol for collecting samples from dead specimens

1) What would we like to know

a) Evidence about cause of death

Based on injuries, location of discovery (e.g. under a powerline, or handed in by a hunter).

b) Pollutants

Most obviously lead, but possibly also pesticides (e.g. rodenticides, seed dressings), and others.

c) Health and condition

Pectoral muscle condition, fat score, presence of lead shot or other injuries.

d) Reconstructing diet and habitat use

Stable isotope analysis can potentially tell us about diet and habitat use during different time windows.

e) Reconstructing location and population structure

Genetics, morphometrics and stable isotopes can potentially reveal information about the structure of the population (are there separate groups that occur in different areas, or is there complete mixing) and about where different birds come from.

f) General

Age, sex, moult, location, date,

2) Methods

a) Post-mortem examination

i) Injury (*gunshot, raptor, trauma*)

Need to get some basic instructions from e.g. Martin Brown/Ruth Cromie

ii) Fat (*subcutaneous and abdominal*)

Need to decide on and describe a scoring system – get advice from Martin Brown/Ruth Cromie.

iii) Flight muscle/keel shape

Need to decide on and describe a scoring system – get advice from Martin Brown/Ruth Cromie.

iv) Mould

Probably relatively unimportant. Wing/tail moult very unlikely in most of our birds, so we're just talking about body moult.

v) Morphometrics

Metric	Method	Comments
Head + bill		
Flattened wing chord		
Tarsus		
Body weight		Important to note anything that might affect the weight, such as wet plumage, badly deteriorated, or partially scavenged

vi) Sex/breeding status

Sex should be determined upon dissection, not external examination. With dissection it is possible not just to identify male and female, but in the case of females it is possible to determine whether they have previously laid a clutch, and male testis size is an indicator of preparation for breeding. This is useful information.

Provide photographs/description of what to look for.

vii) X-ray

Where possible, birds should be x-rayed, to detect embedded shot. Where no access to an x-ray machine, but there is access to a freezer, it might be worth storing the whole bird, and then arranging at some point in the future for the x-ray machine in Bulgaria to be used.

b) Tissue sampling and storage

i) Genetic material

A very small piece of pectoral muscle, preserved in 100% ethanol in a labelled vial. Storage at -20C is also OK, certainly for a period while ethanol is being sourced, but is not good for long-term storage.

A less effective alternative is to pluck some body feathers (e.g. from under the wing), ensure they are dry, place them in an envelope and store at room temperature (alternatively, in a sealable plastic bag, but in this case they need to be with some dessicant e.g. silica gel).

ii) Stable isotope analyses

Different tissues give information from different time windows, therefore several samples is ideal.

- Blood (e.g. from inside the heart)
- Claw (cut a toenail off)
- Feathers from different parts of moult cycle (inner primary, middle primary, outer primary, *check body moult*)
- Liver (small piece of tissue)
- Bone

All samples should be carefully labelled and stored at -20C in a freezer.

iii) Lead and other pollutant analysis

Check with Rafa Mateo/Debbie Pain/Ruth Cromie.

c) General details

- Date found
- Location where found (MUST be a latitude and longitude; should be in decimal degrees. If not in decimal degrees, record what it is in.
- Proximity of hunting site, power lines, wind turbines, other built infrastructure etc.
- Details of find (who, why, when)
- Other incidental details: other deaths known, severe weather recently, poisoning incidents etc.

d) Data storage

Each bird should be given a unique identifier. This unique identifier should be recorded on ALL tissue samples etc, for that bird.

An excel spreadsheet should be developed which records, for each uniquely identified bird, the measurements, the samples taken and where/how they are stored, and the general details about the find.