



WILDLIFE ETHICS COMMITTEE

Collection of voucher specimen policy

What is a voucher specimen?

A voucher specimen is usually (but not always) a whole animal that is killed humanely, preserved and retained in a museum as a permanent reference.

'Best practice' for biological survey work is to validate species' distribution records with voucher specimens lodged in major natural history collections for future verification and taxonomic revision. Where research relates to a single study species, the quality of the scientific work will be strengthened if a voucher specimen is lodged as a reference specimen in case of future taxonomic revisions.

Alternatives

Many bird distributions are now routinely based on visual records only, justified by the high level of taxonomic discrimination reached in avian taxonomy and the wide availability of expertise in bird identification. Other species that are readily identified and well represented in museum collections (e.g. large lizards) can also be judged as not requiring collection, at least for particular geographic areas. For some species (e.g. large, uncommon species) tissue samples may be an acceptable alternative to whole bodies.

The following tissue samples for vertebrates are recommended in cases where whole voucher specimens are not required:

- Fish: fin clip (preferably caudal fin (tail) or small clip from pectoral fin).
- Limbed lizards: tail tip (2–4 mm)
- Limbed lizards with highly modified or specialised tails: toe tip or 1-2 scale clips
- Snakes, legless lizards: tail tip (2-4 mm) or 1-2 scale clips
- Frogs: toe tip (2–4 mm; not from "thumbs" or specialised digging toes)
- Small dasyurids and rodents: preferably a small (< 4 mm) strip of skin from the outer edge of the ear. Ear punch or tail clip may be justifiable.
- Bats: 3 mm diameter disc removed from the wing using a biopsy punch
- Other Mammals: hair with bulbs (10 hairs minimum).

Notes: Scale clips should be taken from the overlapping edges of large lateral body scales.

Samples should be stored in 70% ethanol immediately upon collection.

The technology to analyse biological samples is improving constantly, therefore it is important to obtain expert advice on suitable samples from a relevant specialist.

When there is reason to suspect the presence of cryptic taxa, then there is no alternative but to take tissues and vouchers from across the region of interest, if not sufficiently represented in collections.

Numbers

Normally, no more than two whole voucher specimens (preferably one male and one female) should be collected from any single trap site, with a maximum of five over the total survey area. Collecting higher numbers will require additional justification.

Data

Researchers must ensure that all specimens lodged at museums are accompanied by the necessary location information and collection details. Without this information the specimen is of no real value and the justification of taking it is lost. The accurate recording of collection details for voucher specimens will minimise unnecessary duplication in specimen collecting.

Survey preparation

Prior to a survey, applicants will need to establish the extent of previous fauna survey work in the area, including the numbers and localities of any South Australian Museum specimens that have already been registered from the survey area. Specimen data from the South Australian Museum is available from the [Atlas of Living Australia](#). Current knowledge of species' distributions can be obtained from Department for Environment and Water (DEW) via a [data request](#).

Consulting with the appropriate specialist at the SA Museum will facilitate developing a collecting strategy that minimises the number of voucher specimens taken while not compromising on the scientific rigour and verifiability of the survey data. The results of such discussions with the museum and other relevant experts should be referred to in the application for ethics approval, and form the justification for the type of specimen (e.g. whole body or tissue) and recommended numbers of specimens that are proposed for collection.

Specimen preparation

Researchers must also seek advice from the SA Museum on appropriate methods for preservation of specimens, whether tissues or whole animals. Please refer to the 'preserving specimens' section (Section 2, pages 26-27) in [Guidelines for Vertebrate Surveys in South Australia](#).

In order to maximise the value of the specimen these basic principles should be followed:

- Liver or tissue sample taken and preserved in ethanol as soon as practical following death.
- Bodies are preserved with formalin for 24-48 hours or a minimum of one week for birds or mammals. Reptiles and amphibians are fixed initially using formalin vapour, while birds and mammals are fixed using dilute formalin solutions. Opening body cavities or subcutaneously injecting formalin will hasten the preserving process. They are then transferred to ethanol for longer-term storage.
- Refrigerate up to 72 hours or freeze body if formalin is not available. As a last resort preserve in ethanol.
- If a post-mortem examination is required, keep the specimen cool but not frozen. Do not immerse in preservative, or freeze, for vouchering until after the post-mortem has been performed.

Requirements

Before carrying out a survey, the leaders and/or members of the survey must obtain:

- Suitable skills in the humane killing of animals for voucher specimens.
- Appropriate experience and/or knowledge of the correct procedures for the collection and preservation of animal tissues and whole body specimens.
- Skills in the identification of species that will be encountered.

- Approval from a South Australian animal ethics committee (in addition to any ethics approval from a committee outside the state).
- A Licence for Teaching and Research Involving Animals from the DEW Animal Welfare Unit (under Part IV of the *Animal Welfare Act 1985*).
- All necessary SA Health Department licences/approvals relating to the possession and use of a controlled substance (i.e. drugs for humane killing of specimens).

REFERENCES

WEC Euthanasia of research animals in the field policy

Australian Society of Herpetologists (ASH) Position Statement No 1 - Toe Clipping of Lizards

[Owens \(2000\) Guidelines for Vertebrate Surveys in South Australia – Using the Biological Survey of South Australia](#)

CONTACT

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