



WILDLIFE ETHICS COMMITTEE

Collection of voucher specimen policy

What is a voucher specimen?

A voucher specimen is a whole animal, or part of an animal, that is collected humanely, preserved and retained as a permanent reference.

The quality of scientific work will be strengthened if a voucher specimen is lodged as a reference specimen in a major natural history collection for future verification and taxonomic revision. Within South Australia the South Australian Museum is considered the primary institution for the lodgement of reference specimens and advice on preservation.

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 specimens from the area that have already been registered with a major natural history collection, such as the South Australian Museum. Specimen data is available from the [Atlas of Living Australia](#). Current knowledge of species' distributions in South Australia can be obtained from Department for Environment and Water (DEW) via a [data request](#).

Consulting with the appropriate specialist at the South Australian 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.

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

Specimen preparation

Researchers must also seek advice from the 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](#) for specific details.

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

- When using Lethobarb for euthanasia, body contortions can be minimised by following correct administration techniques, specifically, using correct dilutions, avoiding the body wall and ensuring the needle tip is into the abdominal cavity before injecting.
- Liver or tissue sample taken and preserved in 95% non-denatured ethanol (separate tubes) as soon as practical following death or removal
- Tissue sampling advice for whole body fish vouchers is as follows. Take samples from fish's RHS only; ideally muscle biopsy from RHS flanks or alternatively RHS pectoral fin including fleshy base if possible. For bony species such as seahorses & pipefishes take the entire RHS eyeball.
- Reptiles and amphibians are set initially using formalin vapour on setting trays for a minimum of 24 hours before being transferred to a formalin container.

- Mammals and fish are fixed using dilute formalin solutions for a minimum of one week. 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.
- Birds should be preserved by freezing.
- If a post-mortem examination is required for any animal, keep the specimen cool but not frozen. Do not immerse in preservative, or freeze for vouchering until after the post-mortem has been performed.

Alternatives to whole body vouchers

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 technology to analyse biological samples is improving constantly, therefore it is important to obtain expert advice on suitable samples from a relevant specialist. As a starting point the following tissue samples for vertebrates are recommended in cases where whole body voucher specimens are not required:

- Fish: take small fin clip across corner of caudal (tail) fin or from the outer margin of a pectoral fin when caudal clip is unsuitable. Refer to Specimen Preparation section for fish tissue samples from whole body vouchers specimens.
- Marsupials and rodents: preferably a small (< 4 mm) strip of skin from the outer edge of the ear. Ear punch or hair samples may be justified as an alternative.
- Bats: 3 mm diameter disc removed from the wing membrane using a biopsy punch.
- Other Mammals: hair (where appropriate) with bulbs (10 hairs minimum).
- Frogs: toe tip (2-4 mm; not from "thumbs" or specialised digging toes).
- 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.
- Note: Scale clips should be taken from the overlapping edges of large lateral body scales. Samples should be stored in 95% non-denatured ethanol immediately upon collection.

Numbers

Best practice for standard biological survey work is to collect no more than two whole voucher specimens (preferably one male and one female) 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 are accompanied by appropriate information. As a minimum this should include date, coordinates, datum, reliability, location description, collector name. 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. Attaching a unique field voucher number to each specimen that corresponds with the associated datasheet will allow specimen and data to remain linked.

NOTE: a specimen and its associated tissue samples MUST all share the same field voucher number.

Requirements

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

- Skills in the handling and identification of species that will be encountered.
- Appropriate experience and/or knowledge of the correct procedures for the collection and preservation of animal tissues and whole body specimens.
- Suitable training in emergency euthanasia.
- When appropriate to the study, all necessary SA Health Department licences/approvals relating to the possession and use of a controlled substance (i.e. S4 licence to possess and use barbiturates for field euthanasia).
- Approval from an animal ethics committee approved by the SA Minister for Environment in accordance with the South Australian legislation.
- A Licence for Teaching and Research Involving Animals from the DEW Animal Welfare Unit (under Part IV of the Animal Welfare Act 1985).

Contacts for obtaining licenses, approvals and training can be sourced through the Executive officer of the Wildlife Ethics Committee.

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](#)

Specialist Equipment

The SA Museum can supply or advise on access to specialist vouchering equipment such as tissue collecting tubes, field voucher numbers, linen thread, setting trays and formalin drum/s.

Direct enquiries to the Collections Coordinator (Keith.Maguire@samuseum.sa.gov.au) with a **minimum of 2 weeks notice.**

Contact

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