



Department of **Biodiversity,
Conservation and Attractions**

Western Australian Herbarium

Western Australian Herbarium Destructive Sampling Guidelines

The collections held by Australasian herbaria are maintained with the goal of balancing the preservation of herbarium specimens with the need to use them for taxonomic and systematic research. The Australasian herbarium community acknowledges the changing needs of the scientific community, and endeavors to support a wide range of botanical research.

For the purposes of this document, destructive sampling is defined as the removal of material from a specimen for research purposes other than routine taxonomic examination. For example, removal of leaf material for extraction of DNA or for phytochemical or isotope studies is regarded as destructive sampling. Dissection or removal of parts of a specimen for microscopic inspection is not, if it remains within the bounds of normal taxonomic practice.

Requests for destructive sampling of specimens at the Western Australian Herbarium (PERTH) are considered on a case-by-case basis and according to the merits of the request. Every effort will be made to accommodate the needs of researchers where requests are in accordance with this policy.

Provision of a loan or physical access to specimens does not imply permission to destructively sample material. Such permission will only be granted through specific application for destructive sampling under these guidelines.

Note that the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES: <http://www.cites.org>) and *Australian Environment Protection & Biodiversity Conservation Act 1999* control the movement of plant specimens and parts thereof. Specimens or samples can be sent only to registered scientific institutions. For information on registration and registered organizations, see <https://www.dcceew.gov.au/environment/wildlife-trade/non-commercial/research>.

General conditions

1. Requests to destructively sample specimens are to be made in writing to the Collections Manager (herbarium@dbca.wa.gov.au).
2. Requests must include a completed Destructive Sampling Request form, returned as a scanned PDF or hardcopy. Please provide sufficient information to allow us to determine the feasibility of the request. Where possible, requests to destructively sample specimens on loan should be made at the time the loan is requested (see [PERTH Specimen Loan Policy](#)).
3. For large or complicated requests, researchers are encouraged to visit the herbarium to select specimens for sampling.
4. Specimens in collections may have been treated in various ways (e.g., with preservatives, sterilants, insecticides, freezing, gamma irradiation). Records on the history of treatment of specimens may not be available. Material from specimens is supplied with no warranty of

The Western Australian Herbarium acknowledges the Custodians of the land and waters from where our collections have been gathered, and pays respect to their Elders past and present.

any kind, and the Western Australian Herbarium is not liable for misinterpretations or false results obtained as a result of these treatments.

Material available for sampling

5. Permission will not be granted to destructively sample from type collections, historical specimens (pre-1900), or from taxa represented in the herbarium by less than three (3) collections, except in exceptional instances, and then only by an appropriate Western Australian Herbarium staff member.
6. Material may be destructively sampled from a specimen only if there is adequate material available and only if the scientific integrity of the specimen is not compromised.
7. Material may not be removed from a specimen for a second time if the nature of the study is the same without approval from the Collections Manager.
8. Where possible, samples should be taken from the material in fragment packets and/or from obscured portions of the specimen. Specimens with the most abundant leaf, fruit, or flower material should be sampled first. Care must be taken not to damage the scientific value of the specimen.
9. Unused material removed for study must be placed in the specimen packet, box, or spirit container.

Responsibilities for sampling

10. Removal of material for destructive sampling must be done by PERTH staff, or when on loan, under the guidance of an experienced taxonomist; students in particular must be trained in good herbarium practice before being allowed to destructively sample from specimens.
11. Researchers must remove no more than the agreed, specified amount of material.
12. For each specimen from which material has been sampled, an archival-quality paper slip annotated in typescript or indelible ink (not ballpoint pen) must be attached to the sheet or packet. The annotation slip should indicate what was removed, the nature of the study, the researcher's name and institutional affiliation and the date (see below for examples).
13. Sampled material or derivatives (including aliquots, extracts, and images) must not be made available to any third parties without written permission from the Collections Manager, and a separate authorized Materials Transfer Agreement.
14. Sampled specimens should be cited by the specimen catalog (PERTH) number in any resulting publication(s) and a copy of the publication(s) sent to the Western Australian Herbarium. The Western Australian Herbarium must be acknowledged in any resulting publication(s).
15. Please note that the Western Australian Herbarium is not responsible for validating the provenance or permit authorization of specimens housed in the collection. Users of materials are responsible for ensuring that State and Commonwealth legislative requirements are met, and that international conventions and treaties are not contravened.

Samples for anatomical and other studies

16. Depending on the nature of the study and specific requirements of the institution involved, digital or physical records derived from specimens (e.g., digital images or photographs, permanent slides, SEM stubs) should be returned with the specimens. These will be permanently associated with the specimens.

Samples for molecular or chemical studies

17. Requests for molecular or chemical studies must include an estimate of the amount of material needed.
18. Results (both positive and negative) must be recorded on an annotation slip to be provided with the specimen (unattached) or returned to the Western Australian Herbarium in digital format.
19. Molecular data must be lodged in a publicly accessible database (e.g., GenBank). The PERTH specimen catalog number must be included in the specimen voucher field.
20. Genbank and other accession numbers must be included on the annotation slip or provided to the Western Australian Herbarium as they become available. If retained extracts are used to sequence additional gene regions, the Western Australian Herbarium requests this information also be supplied.

Example annotation slips:

Leaf material removed for DNA analysis. Studies of *Xerochrysum* and related genera
J. Bloggs (MELU) 7 June 2023
PERTH EX23-924

Fruit removed for SEM imaging.
J. Smith (PERTH) 21 July 2011
PERTH EX11-512



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Western Australian Herbarium (PERTH) Destructive Sampling Agreement

Researcher:

Institution

Email:

I have read and agree to the conditions of the PERTH Destructive Sampling Guidelines

Signature: **Date:**

Supervisor/Faculty Adviser (if researcher is a student):

Signature: **Date:**

Head/Delegated Officer of Receiving Institution:

Signature: **Date:**

Project outline attached Please attach a project outline, including project title, what efforts have been made to obtain fresh material, specific requirements for tissues, such as what and how much material is required (e.g., one flower, 20 mg leaf material, optimal age of specimen), evidence of well-developed protocols for DNA extraction, etc.

Taxa or list of specimens requested attached Please search the Australasian Virtual Herbarium (<https://avh.ala.org.au/>) for specimens available at PERTH.

Office use only.

Approved: Yes No

Comment:

PERTH Number:

Signed/Date: