



Department of **Biodiversity,
Conservation and Attractions**

Western Australian Herbarium

Western Australian Herbarium Reference Herbarium User Guide

The Western Australian Herbarium (PERTH) **Reference Herbarium** is a special-purpose, public access facility housing representative specimens of Western Australia's native and naturalised vascular plant species. It provides a comprehensive reference collection for the identification of the State's plants, a collection of library and electronic resources, and infrastructure to facilitate botanical study.

The Reference Herbarium is a primary resource for both the community and industry consultants for identifying specimens. The Reference Herbarium consists of specimens duplicated from the Western Australian Herbarium Research Collection. **Please handle the Reference Collection and library with care at all times.** Replacement of specimens due to poor handling and subsequent damage is costly, time consuming, and often not feasible. We recognize the Reference Herbarium Collection is not complete and will, at times, be insufficient to finalise an identification. We encourage users to assist us with helping to provide legally-collected duplicate material to further enhance the collection.

Access.

Located in the Keiran McNamara Conservation Science Centre (KMCSC), the Reference Herbarium is open to visitors during normal working hours Monday – Friday, 8.00 am to 4.30 pm, except Public Holidays, during a twice yearly scheduled intensive cleaning (approx. March, September), and a December-January closure. Use of the Reference Herbarium outside these hours requires special advanced arrangement from the Curator or Collections Manager (herbarium@dbca.wa.gov.au) and will be dependent on staff availability.

Large groups of users are encouraged to notify the Herbarium (herbarium@dbca.wa.gov.au) prior to arranging a visit to ensure accessibility and enable regular users to be informed of space limitation.

The **Reference Herbarium Attendance Register** is located just inside the Reference Herbarium. Please sign in and out each day. Signing the register is mandatory, ensures your safety, and allows the Herbarium to document usage of the facility, leverage funding, and provide resources to the Reference Herbarium proportionate to its use.

By signing the Register you acknowledge that you have read and accept the conditions of use of the Reference Herbarium as set out here, including agreeing to the following Code of Conduct:

- Treat other Reference Herbarium users, colleagues, volunteers and staff with respect, courtesy, sensitivity, honesty and fairness, and have proper regard for their interests, rights, safety, welfare and diverse backgrounds;
- Sign in and sign out every day the Reference Herbarium is used;
- Work safely at all times, and avoid unnecessary risks to yourself and others;

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

- Report any hazard, hazardous practice or incident in a timely manner to DBCA staff;
- Not use inappropriately, or tamper with, DBCA infrastructure or property;
- Accept and comply with directions from DBCA staff and seek guidance if there is any uncertainty regarding what is required when using the Reference Herbarium;
- Approach a DBCA staff member as the first point of contact if there are any issues, queries or concerns, or email herbarium@dbca.wa.gov.au for non-confidential concerns;
- Ensure conduct reflects a commitment to a workplace that is free from bullying, discrimination or harassment and where all people have equal opportunity;
- Ensure interactions with DBCA staff, other Reference Herbarium users, volunteers, students, are respectful, courteous, honest and fair;
- Understand the consequences of misconduct and actions that may be taken if this Code of Conduct is not followed, which may include a period of suspension or a total ban on access to the Reference Herbarium and other Western Australian Herbarium facilities.

Please note: There are security cameras installed to monitor activities within the public spaces of the Keiran McNamara Conservation Science Centre, including the Reference Herbarium.

Disclaimer.

Some material found in the Western Australian Herbarium, on specimens and in data, contains terms or descriptions that reflect authors' views, or those of the period in which the item was written or recorded, but may not be considered appropriate or are culturally sensitive today. These views are not necessarily the views of the Department of Biodiversity, Conservation and Attractions and the Western Australian Herbarium. While the information provided may not reflect current understanding and might not normally be used in certain public or community contexts, it is provided in an historical context. Aboriginal and Torres Strait Islander people should be aware that the Western Australian Herbarium contains names of deceased persons.

General Information.

No food or beverages are permitted in the Reference Herbarium even in sealed containers; water alone is permitted in a sealed container, away from specimens. A café is available on the Ground Floor, and pleasant outdoor seating surrounds the building.

Bathroom facilities are available in the corridor outside the Reference Herbarium.

Smoking and vaping is not permitted in the Reference Herbarium or within 5 metres of any part of the Keiran McNamara Conservation Science Centre building.

The door to the Reference Herbarium must remain closed at all times.

Please consider other patrons of the Reference Herbarium at all times:

- Leave the facility in a clean and tidy state.
- Speak in quiet tones.
- Switch mobile phones to silent.
- Take phone calls outside.

- Wear appropriate attire and maintain appropriate personal hygiene. Clean field clothing is acceptable.
- Don't monopolise resources at the expense of others.

Arrangement within the Reference Herbarium.

To locate a family or genus in the Reference Herbarium refer to the *Western Australian Herbarium Vascular Plant Index*. Multiple printed and bound copies are available throughout the Reference Herbarium. No fungi, lichens, algae or bryophytes are represented in the Reference Herbarium.

- Vascular plant families are arranged by APGIV.
- Genera and species are alphabetically arranged within a family.
- Subspecific taxa are arranged alphabetically within a species.
- Phrase named taxa are alphabetically arranged at the end of the genus.

Photographing Reference Herbarium specimens is permitted; please, no flash photography.

Safe handling of Reference Herbarium files and specimens.

Please take great care when handling the files and specimens. Specimens are extremely fragile and irreplaceable records of the Western Australian flora.

- Wash hands before and after handling specimens. Please, no hand sanitiser.
- Take only a single file at one time. Carrying more than one folder at a time significantly increases the risk that one (or more) will be dropped.
- Pick the file up with both hands, one hand supporting the base. Do not lift the folder by the ring or the top of the spine and allow the specimens to hang unsupported.
- Do not place one open folder on top of another.
- Ensure that when the folders are lying open, specimens in the folder are lying flat.
- Place specimens back in the correct folder and in the correct order. Remember: misfiling is a time waster for everyone.
- Specimens and folders must not be tipped upside down.
- Do not bend or twist specimens.
- Ensure specimens remain in their protective plastic sheets.
- Do not place heavy objects on, or lean on, specimens or files.
- Place the specimens face up and lock the clip at the natural height of the specimens (i.e., do not push the clip down as far as it will go - no compression) before re-shelving a file.
- Place files back with care, do not drop or force them.
- Place specimens and files back on the shelf as soon after use as possible to ensure the resource is available to others.
- Do not alter specimen labels or file information or annotate specimens.

Quarantine Procedures.

Along with poor handling, the Reference Herbarium specimens are vulnerable to damage from a range of insect pests.

Biological materials, including field collected specimens, may enter the Reference Herbarium ONLY IF:

1. Specimens and associated packaging have been frozen using the Herbarium freezing service; or
2. Individual specimens are sealed and remain in snap-lock bags. All associated packaging must remain outside the Reference Herbarium.

Freezing specimen checklist

Only specimens frozen on site, by the Western Australian Herbarium, may be taken into the Reference Herbarium without being bagged.

Freezer bags and other supplies for the freezing process are no longer provided. Reusable boxes are available for loan; please see the [Herbarium Freezer Loan Box Guidelines](#).

- ☐ Specimens are pressed and completely dry. Wet specimens will mould on thawing and result an occupational health and safety issue.
- ☐ Place specimens within a sealed plastic storage box or plastic-covered *standard sized* Herbarium cardboard box. Larger boxes are not recommended and are discouraged. We also do not recommend boxes previously used to house fruits/vegetables/other produce.
- ☐ Complete a new box label providing the *most appropriate* contact information, in case issues arise (e.g., freezer failure) – the end user rather than the deliverer, please.



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WESTERN AUSTRALIAN HERBARIUM -REFERENCE HERBARIUM FREEZER LABELS

DATE	CONTACT NAME	ORGANISATION
CONTACT EMAIL:		NUMBER OF BOXES:
EMAIL PREFERRED		
COMMENTS:		

- ☐ Attach label along the side of each box using supplied tape.
- ☐ For cardboard boxes only: bag and tape closed cardboard boxes (plastic bags and boxes are not provided by the Herbarium). Push as much air out of the bag as possible and securely tape closed. The plastic bags must be sturdy (100µm thick or more), new (to ensure there are no holes or old plant materials), and long enough to turn the end of the bag three times prior to taping down. Bagging prevents water damage and moisture condensing on specimens whilst freezing or on thawing. Bagging also minimizes the movement of any insects.
- ☐ Complete the box Freezer Register, found on a clip-board on the bench outside the Reference Herbarium for box tracking.
- ☐ Place the box/s on the trolley at the Reference Herbarium entrance.

Specimens delivered to the Reference Herbarium prior to 10 am enter the freezer the same day. Please note: delivery of specimens for Reference Herbarium freezing cannot be accepted by courier or mail service.

Integrated Pest Management protocol requires that specimens be frozen for 48 hours at -20°C, followed by a 24 hour period at room temperature before becoming available. Specimens will be available *three working days* after entering the freezer; specimens will be

delivered to allocated shelving on the back wall of the Reference Herbarium. For more information, please see the [PERTH Integrated Pest Management Plan](#).

Freezer rotation timetable:

<i>Drop off (before 10 am)</i>	<i>Available (after 10 am)</i>
Monday	Thursday
Tuesday	Friday
Thursday	Monday
Friday	Monday

Please note: we do not have a freezing rotation pickup on Wednesdays. We will do our best to keep to this timetable but freezer or staffing limitations may change the schedule. We will contact the individual listed on the freezer label in case of emergency.

Checklist for specimens in sealed bags

- ☐ Enclose each specimen in a separate, sealed bag.
- ☐ The bag must remain closed at all times whilst in the Reference Herbarium.
- ☐ If dissection of a bagged specimen is required, contact the Collections Manager to arrange access to a microscope in the Preparation Laboratory which is near the Reference Herbarium.
- ☐ Remove the specimen from the Reference Herbarium at the end of the day or place within the bag in the yellow quarantine bin.

Small snap-lock bags are available at no charge in the drawers located under the bench outside the Reference Herbarium. Snap-lock bags must be a minimum of 50 micron thick and may be purchased in a range of sizes from Vital Packaging (see: <https://vitalpackaging.com.au/>).

Other items that must not enter the Reference Herbarium include:

- Unwashed field clothing and field backpacks; unfrozen field notebooks;
- Non-frozen presses, cardboard boxes, newspapers, and corrugated cardboard;
- All food and beverage items (including lunch bags);
- Cigarettes or other tobacco products;
- Large personal bags, as they form a trip hazard and may accidentally harbour pests.

These items may be left for the day in the drawers under the bench outside the Reference Herbarium. Please leave the area outside the Reference Herbarium tidy at all times.

At the completion of your session:

Please note that the Reference Herbarium is not cleaned by cleaning contractors, except for the 6-monthly cleans. We rely on you to help us keep the facilities clean and pest free. A range of cleaning tools (brooms, brushes, vacuums) are available for use.

- Ensure all Reference Herbarium specimens are placed in their folders on the shelves.
- Please, take away your plant material, newspapers, corrugated cardboard, and snap-lock bags containing specimens.

- Clean and reset the area in which you have been working.
- Sweep up or vacuum plant debris and fragments. Plant material, papers, cardboard or other plant-contaminated materials MUST go in the **yellow** MediCollect bin, not in the general **black/blue** bin.
- Other (non-food/beverage) rubbish can be deposited in the smaller **black bin**; the small **blue bin** is for recycling paper that has not contacted biological materials.

Short-term storage area.

The short-term storage area is for users of the Reference Herbarium to store frozen specimens currently being worked on. It is not personal item or long-term (more than 2 weeks) specimen storage. This area is only for the storage of specimens that have been frozen; un-frozen specimens in snap-lock bags must not be stored in the Reference Herbarium and must be removed daily.

The shelving is regularly monitored and boxes of specimens will be removed if they have been stored for longer than a month, or if the box has no external identifying markings or labels. Due to high volumes of specimens and limited storage space, we request users not to freeze specimens for storage until actually needed for study. The Western Australian Herbarium takes no responsibility for specimens stored in the short-term storage area of the Reference Herbarium.

Please store boxes lengthwise on the shelving and not protruding into the corridor.

Completed specimens submitted for identification are placed for collection in the bookshelves adjacent to the sign-in desk.

Feedback and Comment File.

The Herbarium encourages users to provide feedback, particularly when irregularities are noticed, such as damaged or insect-attacked specimens, presence of mould, incorrect names, missing specimens, missing resources, or broken equipment. Please note that the Reference Herbarium is not complete, and that specimens may be removed at any time if they are found to be part of a Type collection or are no longer of scientific value due to extensive damage. Please see <https://florabase.dbca.wa.gov.au/help/copyright#copyright> for more information about the limitations to our collections and data.

Resources.

As a courtesy to all users, please place resources back into binders and on the shelf in the correct order as soon as possible after use.

Computers are available for accessing Florabase, JSTOR Global Plants, interactive keys, DBCA library resources, and other online electronic resources. Users are unable to install software, modify configurations or files, and should not save anything to hard discs or other drives.

Free Public Wifi is available. The guest login details are available on the pin-board by the bookshelves.

Bench space and microscopes are self-allocated on a first-come basis. During busy periods patrons will need to share these resources, and online bookings may be implemented when user numbers need to be restricted.

Western Australian Herbarium Vascular Plant Indexes: This index lists every WA family and genus represented in the Reference and Research Collections. The lists are a guide to the file number on the shelves to locate a genus or family in the Reference Herbarium, and also an address to locate the genus or family in the Research Collection. Not every family or genus listed in the Index is currently represented in the Reference Herbarium but there will be a file number to allow for future expansion.

Books including floras, journals etc., are held in a small library in the Reference Herbarium. Please do not write on or annotate books. Please handle with care. Please do not remove from the facility.

Electronic keys prepared by the Herbarium staff and volunteers are available through each computer via Florabase (<https://florabase.dbca.wa.gov.au/>).

Lockable drawers outside the Reference Herbarium are available for daily use to protect valuables or to store items that cannot be taken into the Reference Herbarium (e.g., field backpacks, lunch items, cigarettes).

Other resources and information.

Identification and Incorporation services are available; please see the [PERTH ID and Incorporation Services](#).

The **Research Collection** of the Western Australian Herbarium (PERTH) is a valuable and irreplaceable resource that underpins flora conservation, biodiversity surveys, and taxonomic and other scientific and cultural research. Scientific botanical specimens are managed to protect their value indefinitely. Many specimens are fragile, and the Herbarium must balance the needs of users with the long-term safety of its specimens. This is best served by ensuring that unnecessary and inappropriate handling is avoided wherever possible. The Research Collection should be accessed only when the resources of the Reference Herbarium have been exhausted.

For those requiring *regular and necessary access* to the irreplaceable Western Australian Herbarium Research Collections, inductions are offered once a month, usually the first week of each month. Inductions are mandatory for annual access to the Research Collections; the Reference Herbarium is public access and does not require an induction. Registration and more information can be found here: <https://waherbariuminduction.eventbrite.com.au>

The Research Collection is accessible Monday – Friday, 8.30 am to 4.30 pm, except Public Holidays, during a twice yearly scheduled intensive cleaning (March, September), and a December-January closure. Please see the [PERTH Research Collection User Guide](#) for more information.

Herbarium specimen label and other biodiversity data: The Western Australian Herbarium is completely databased. Digital data is available from Florabase (<https://florabase.dbca.wa.gov.au/>) and the Australasian Virtual Herbarium (https://avh.ala.org.au/occurrences/search?q=collection_uid%3Aco75). Please email herbarium@dbca.wa.gov.au if you need assistance with a specific query.

Threatened and Priority Flora data available on herbarium specimens, and particularly specific locality information, are regarded as confidential and should be treated as such by all users of the collection and data. Any data gathered from specimens must not be provided to any other individuals or organisations, nor be used for any purpose other than for the project for which access has been originally granted. Species and Communities Branch is to be contacted for guidance on the reporting of information.

The Department of Biodiversity, Conservation and Attractions respects the privacy of private landowners who may have Threatened and Priority Flora on their property. Such localities should be treated in confidence and contact with property owners must only be made through the Department of Biodiversity, Conservation and Attractions.

Acknowledgement of the Western Australian Herbarium as the source of specimen data is to be made in any published material and cited as 'Western Australian Herbarium (*date accessed*)'.

Identifications, locality information, and geocoordinates of Herbarium specimens may require verification, and have a level of accuracy, precision and uncertainty. While every effort has been made to prevent errors and omissions in data, they may be present, and the Western Australian Herbarium accepts no responsibility.

Images of Herbarium Specimens The Western Australian Herbarium can provide high resolution digital scans of Herbarium specimens upon request; please note that a minimum of five (5) working days lead time is highly recommended. Please see <https://bit.ly/PERTHimaging> for more information.

Type specimens have been imaged and are available via [JSTOR Global Plants](#), with all functionality accessible while at the Western Australian Herbarium.

Type specimens and any other PERTH specimens that have been imaged are available using the static URL: <https://herbarium.dbca.wa.gov.au/> with the PERTH number. For example, https://herbarium.dbca.wa.gov.au/PERTH_09350098.jpg. Please note: it is critical that the space is present in the PERTH catalogue number. You can right click to save the image to your desktop. Please note: very few specimens are currently available, and sensitive information has been hidden from images. The Western Australian Herbarium's specimen images are freely available for use with attribution ([CC-BY](#)) for biodiversity assessment, systematic botanical research, ecosystem conservation, policy development, for educational and other outreach tools.

Stay up to date with changes to access and protocols while accessing the facilities of the Western Australian Herbarium by subscribing to our MailChimp service. Subscribe here: <http://eepurl.com/hk34mH>

Contacts:

General Herbarium queries: herbarium@dbca.wa.gov.au

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