

Progress Report CF 2011-105

Herbarium collections management

Plant Science and Herbarium

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Project Team	granted
Program Leader	granted
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Context

The Western Australian Herbarium houses the State botanical collections, the core resource for knowledge of the State's plants, algae, and fungi. The collection is growing constantly and consistently through the addition of accessions of new taxa and distribution records from internal and external sources. The collection is maintained to a high standard utilising international natural history collections and archival best practice, and provides the department and the community with the fundamental resource that provides knowledge of the diversity, temporal and spatial distribution, and abundance of the flora throughout Western Australia.

Aims

- Document and audit the diversity of Western Australia's plants, algae, and fungi.
- Maintain, in perpetuity, a comprehensive and representative research collection of specimens of all taxa in groups occurring in, and adjacent to, Western Australia.
- Contribute to, support and service the research, conservation and decision-making activities of the department.
- Contribute to, support and service taxonomic and other research by the national and international scientific community.

Progress

- The Western Australian Herbarium added 9,938 specimens to collections, increasing the size of the collection to 811,429 catalogued items, representing more than 18,500 taxa.
- More than 51,000 specimen data records were updated during the year, and through the Australasian Virtual Herbarium and Atlas of Living Australia, almost 25 million herbarium data records were downloaded in 20,200 download events.
- The Herbarium shared specimens with 12 national and 14 international institutions, and shipped almost 9,700 specimens in 146 transactions for scientific research. A total of 1,620 exchange specimens were sent to collaborating institutions, and 19 requests for more than 780 tissue samples from herbarium specimens were processed for molecular and other scientific destructive analyses.
- Major changes within the collections included the curation and rearrangement of the Pteridophyte (fern) and Ericaceae collections to reflect current taxonomic understanding. All Herbarium policies and procedures were updated and made available online, and a collaboration with the Department of Primary Industries and Regional Development and Quarantine WA resulted in improved importation procedures for herbarium specimens into Western Australia from other States.
- Tasks managed by collections staff with the assistance of volunteers included the mounting and labelling of 7,057 specimens and the incorporation (filing) of 31,148 specimens.
- Volunteer participation continues to be a significant and invaluable resource, totalling 7,719 hours, equivalent to approximately 4.5 full time employees. The Herbarium was assisted by about 60 regular volunteers and 35 Research Associates.
- The Reference Herbarium public facility was used by about 1,700 users during the year for plant identifications and other scientific purposes.
- The Research Collection was accessed by 740 visitors for the study and identification of taxa.
- More than 283 high resolution images of Herbarium specimens were captured and shared with departmental staff and industry consultants and a further 516 high resolution images of type specimens were captured and shared with the online Global Plants Initiative.
- The Herbarium Identification Program provided identifications to a range of clients including departmental staff, other government agencies, environmental consultancies, regional herbaria and the public. About 1,500 specimen identifications and 150 image-based identifications were undertaken for external clients.

- Educational role continued with staff providing eight tours and three induction sessions (270 participants) of the Herbarium for departmental staff, tertiary institutions, environmental consultancies, community groups and the media.

Management implications

- Maintenance and curation of the Western Australian Herbarium botanical collections provides an authoritative inventory of the plant biodiversity of Western Australia underpinning flora conservation and national and international research programs.
- The collections are drawn upon constantly by department staff, consultants and others for validating specimen records from biological surveys and for assessing the conservation status of native taxa.
- The curated collections data is a much utilised digital resource for systematic and taxonomic research, collections management, environmental assessment, ecological and other scientific research, restoration and remediation projects, biosecurity management and planning, educational uses, and citizen science.

Future directions

- Develop curation workflows and volunteer programs that enable the imaging of physical collections for online delivery and sharing.
- Significant reduction in current unprocessed and uncatalogued specimen items.
- Develop curated tissue collection with associated vouchers and maintenance plan for future molecular studies.
- Scope gap analysis program for collections.