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Science project 2012-31 Biosystematics of fungi for conservation and restoration of Western Australia's biota

Progress Report

title and summary

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Report Status

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Planning -	

Science Project Overview

Part	Checklist Last Updated
Part A - Summary & Approval	bla

Contents

Context Summary

This project represents a new and timely effort to build the state's biodiversity knowledge base, and create and apply more comprehensive and accurate fungal scientific knowledge for conservation and management of the state's biodiversity.

Aims Summary

- Generate and provide scientifically accurate and comprehensive taxonomic data for fungal taxa in Western Australia that are previously unrecorded, unidentified, misidentified, or ill-defined, particularly taxa of relevance to specific, current DEC conservation initiatives.
- Make available descriptive information about fungi taxa in published form and in online information systems.
- Improve access and uptake of scientific knowledge about fungi and thereby promote better awareness and understanding by scientists and community of the significance of fungal diversity and function in bushlands.
- Achieve greater taxonomic and geographic representation of representation of Western Australian fungi in datasets and as permanent vouchers at the Western Australian Herbarium.

Progress

- Defined and illustrated morphological and molecular characteristics of a further 88 species of Australian Inocybaceae species, in readiness for upcoming monograph book.
- As a core part of this work, built global DNA nLSU-rRNA dataset including 474 sequences from Australasia, and rpb2 gene dataset including 367 Australasian sequences. Released 724 DNA sequences to GenBank.
- Released over100 submissions for resolved new species of Inocybaceae to MycoBank.
- Published journal paper highlighting parallel agaricoid-secotioid species pairings of *Inocybe* from WA wheatbelt and North America.

Management implications

The availability of scientifically accurate and comprehensive information about taxa of fungi in Western Australia will encourage and allow DEC and the community to incorporate knowledge of fungi into management practices. This includes regional biological surveys, managing the interdependent linkages between fungi and plants and animals, and a providing a better basis for assessment of the conservation status of fungi taxa.

Future directions

- Continued taxonomic research defining and documenting species of the ectomycorrhizal fungi family Inocybaceae in Australia.
- Morphological and molecular phylogenetic data of individual collections of Inocybaceae will be generated and assessed then used to define species concepts.
- Construction and compilation of text and illustrative material to produce a complete manuscript that will be submitted to the external client (ABRS) for the target product, a monographic book on the Australian Inocybaceae for the *Fungi of Australia* series.