Progress Report SP 2013-003

South-Western Australia Transitional Transect (SWATT)

Biogeography

Project Core Team

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Project Team	granted
Program Leader	granted
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South-Western Australia Transitional Transect (SWATT)

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Context

The South-Western Australian Transitional Transect (SWATT) is one of four national ecological transects or plot networks that traverse key Australian terrestrial ecosystems. The principal purpose of the transects is to measure selected biodiversity attributes along with biophysical processes, which will inform key ecosystem science questions and assist with the development and validation of ecosystem models. Transects will enable benchmarking and subsequent monitoring of trends in ecological condition in response to continental-scale biophysical processes such as climate change. Currently, the focus of SWATT is to define, describe and understand the floristics and vegetation communities occurring on deep sand plains across the transect.

Aims

- Define, describe and understand the floristics and vegetation communities on deep sand plains across the transect to provide a baseline for monitoring change and impacts of disturbance, e.g. fire.
- Identify sensitive, important or significant species and communities in the sand plain vegetation community and provide management recommendations.

Progress

- Further data analysis has been undertaken to better understand patterns in sandplain beta diversity and complimentary with patterns in the Yilgarn Banded Ironstone Formations (BIF).
- Plant specimens selected and prepared for lodgement in herbarium.
- Commence discussions with University of Adelaide in respect to using isotopic signature in plants to delimit climate niche and species turnover along SWATT.

Management implications

A more detailed understanding of the beta-diversity patterns and vegetation structural attributes of the sandplains will enable:

- implications of large-scale development proposals on biodiversity values to be better appreciated;
- the amount of additional survey required to adequately assess large-scale development proposals to be determined;
- implications of current fire management practices on biodiversity values to be assessed;
- a more accurate assessment of the current reservation status of the sand plain vegetation types to be developed;
- better understanding of the conservation status of many species restricted to sand plain habitats.

Future directions

- Publish paper on patterns of sandplain beta diversity and complementarity in patterns observed with respect to those previously identified for the Banded Iron Formation ranges of the Yilgarn.
- Lodge voucher specimens in WA Herbarium.
- Seek additional resources to expand research activities along the SWATT to capture patterns of biodiversity amongst various faunal groups and across other vegetation types.
- In collaboration with the Terrestrial Ecosystems Research Networks' AusPlots facility