



Australian Government

National  
Landcare  
Programme



## Standardising environmental monitoring and data systems for improved decision-making

A project to provide standardised ecological field survey and monitoring protocols, consistency in data recording and support for the development of a biodiversity data repository that stores and shares FAIR<sup>1</sup> survey data.

*This three-year project will develop standardised field survey protocols for the Australian Government to assist land managers, development project operators and environmental consultants collect consistent and comparable monitoring data.*

*Standardised data collection complemented by FAIR data sharing will help create transparent and streamlined environmental assessment processes that enable robust decision-making around proposed developments and matters of national environmental significance.*

Conservation and restoration programs and environmental impact assessment decision-making need access to consistent, comparable data across programs, jurisdictions and ecosystem types to understand change and effectively inform natural resource management and conservation decision-making.

The challenge is to harmonise ecological field collection, data management and data exchange systems among those involved in Australia's ecosystem and biodiversity monitoring, management and decision-making.

### Three-year trial project

The Department of Agriculture, Water and the Environment (DAWE) is working with Australia's Terrestrial Ecosystem Research Network (TERN), to co-design the ecological monitoring protocols and data exchange system.

The new protocols build on TERN's data aggregation systems and well-tested survey protocols. TERN has produced a set of modular methods implemented at over 700 monitoring plots Australia-wide since 2012. A modular approach to the collecting protocols will enable individual projects to collect information that is relevant to their project, whilst not requiring projects to collect information beyond the scope of their project needs.

### Standardised data collection protocols

This project will ensure service providers and ecologists collecting field data have ready access to comprehensive instructions for a suite of standardised collecting protocols, be able to use web-based applications in the field to enter data and take photographs, and have access to web-based portals to curate and manage data collected.

**Images:** Field Officers conducting point intercept surveys, *Eucalyptus diversifolia* mallee shrubland, Kangaroo Island (SA).

<sup>1</sup> FAIR data: meeting the principles of findability, accessibility, interoperability, and reusability



The standardised monitoring protocols will be used to support future DAWE Natural Resource Management (NRM) programs that benefit the environment, farms, and communities. In addition, the protocols will be available for use by other environmental land managers and environmental consultants.

Using the new standardised methods, DAWE's program delivery teams will engage with communities and NRM regions across Australia to deliver more harmonised and scientifically robust NRM activities.



**Images:** (Top) Field Officers conducting point intercept surveys, mixed Eucalyptus woodland, Mt Duval, University of New England (Armidale, NSW). (Middle) Field Officer in a 1 m deep soil pit, Edel Land National Park (proposed), Shark Bay (WA). (Bottom) *Dichanthium sericeum* dominant grassland, Carnavon Station Reserve, Bush Heritage Australia property, Brigalow Belt (Qld).

## Streamlined data curation and management

In parallel to the development of standard collection protocols, DAWE will work with TERN to develop a standardised data exchange system to support better access to and reuse of data from environmental monitoring and surveillance projects. DAWE is implementing a nationally federated repository to store and share environmental data between proponents, regulators and the community.

The new standards will enable these data to meet the internationally agreed principles of FAIR, supporting better access to, and re-use of, the data for multiple purposes, including research, development application assessments and policy-making.

Overall, the entire process from designing monitoring projects, conducting the monitoring, managing and accessing the data, and analysing the effectiveness of NRM outcomes/impact assessments, will be more streamlined, consistent, automated and robust.

For further information, please email DAWE at [MERIT@awe.gov.au](mailto:MERIT@awe.gov.au) or TERN at [tern@uq.edu.au](mailto:tern@uq.edu.au)

## References

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