

A Knowledge Bank of Management Effectiveness for Natural Resource Management

The Australian Government and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) are working together to develop a Knowledge Bank of Management Effectiveness for Natural Resource Management (NRM). The project will consolidate and organise the growing body of evidence about the effectiveness of NRM activities in order to support government agencies and the NRM community to make informed, strategic decisions about on-ground management.

What is the Knowledge Bank of Management Effectiveness?

The Knowledge Bank will be a repository of information about the effectiveness of NRM activities that can be readily accessed by a range of end users across government agencies and the NRM and scientific communities. The project aims to improve the current state of understanding about environmental management and support improved evidence based decision making by:

- collating knowledge about management effectiveness as well as knowledge gaps,
- assigning confidence ratings to existing management recommendations,
- determining how extensively management recommendations can be applied to like-for-like assets or threats, including within the Conservation Management Zones of Australia framework,
- advice on strategic monitoring needs to address knowledge gaps,
- establishing and linking the Knowledge Bank information architecture with existing tools and resources, such as the Atlas of Living Australia to enable this knowledge to be easily deployed and accessed into the future.

As part of this project, the Department of the Environment will also establish ongoing governance and collaboration processes for the continuous update and improvement of the Knowledge Bank.

Why do we need a Knowledge Bank?

Natural Resource Management and Landcare activities are fundamental to the ongoing health and prosperity of Australia's environment.

Over the past three decades, a growing body of evidence has accumulated regarding the effectiveness of on-ground management activities. Particularly within a fiscally constrained environment, there is a need to improve accessibility to, mobilise and optimise the re-use of existing evidence.

In addition, there is a need to systematically identify where there may be significant knowledge gaps about environmental management activities.

The Knowledge Bank will support strategic investment in environmental management activities, as well as help direct monitoring efforts to address knowledge gaps.



Fire management in the top end
Image credit: CSIRO

How will the Knowledge Bank be developed?

The Knowledge Bank is being developed by a cross-disciplinary team from CSIRO and the Department of Environment. The CSIRO team includes ecologists, scientists and knowledge managers with expertise in:

- designing and managing large environmental evidence systematic reviews,
- wildlife habitat management,
- weeds and feral species management,
- sustainable agriculture including soil ecology,

- hydrological management,
- protection and rehabilitation,
- fire ecology,
- invertebrate and disease dynamics,
- Indigenous engagement.

The initial development will occur over the course of two years to June 2017. A number of phases have been identified to progress towards a live, updateable information system:

Architecture development

This phase will design the information architecture to enable ingestion and extraction of knowledge into the future. This includes the selection of the software and format for housing the Knowledge Bank.

In order to design the database architecture and its integration within other project management and reporting tools, the team will also develop a series of program logics that clarify the relationship between management actions and their desired outcomes.

Literature Review

CSIRO will undertake a search and systematic review of published and grey literature about management effectiveness. The literature review methodology will be peer reviewed to ensure widespread agreement on its legitimacy and repeatability.

Evidence will be categorised according to the volume and type of evidence available, as well as the effectiveness with which management actions can achieve desired outcomes within particular environmental asset types.

Knowledge gaps and targeted monitoring

The above process will enable identification of knowledge gaps and support development of recommendations for targeting scientific monitoring. Gaps will be identified if there is a paucity of evidence available, if available evidence is inconclusive, as well as whether the evidence is amenable to synthesis and generalised recommendations.

Confidence rankings and inferring findings

CSIRO will develop and implement a final confidence ranking scheme and assess limits to inferring findings based on certainty of effectiveness. Certainty will be determined by a range of possible variables including the volume of information, the rigour of the studies, the degree of consensus, specificity to environmental asset types and other agreed measures, such as relevance to assets or threats within specific Conservation Management Zones.

Ongoing maintenance and governance of the Knowledge Bank

The Department of the Environment, in consultation with the CSIRO team will make recommendations for the ongoing maintenance and governance of the Knowledge Bank. This may involve establishment of an advisory committee or similar governance arrangements to regularly assess new evidence or consider adaptations to management actions that may need to occur within the context of a changing climate.

How the project team will engage with the NRM and environmental science communities

The project team will engage with the NRM and science communities, state conservation agencies and environmental non-government organisations to ensure that the Knowledge Bank is optimally designed to provide a lasting and flexible resource. The project team will seek advice from these stakeholders on how to make it compatible with existing processes and systems, as well as determining the governance arrangements for continuous development of the Knowledge Bank.

Seminars and presentations may also be given throughout the development phase.

Notice of any seminars and calls for engagement will be made on the Department's website.

If you're interested to know more, contact us.



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FOR FURTHER INFORMATION

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