Scientifically-based Monitoring

Research Fact Sheet

Forests, Fire and Regions Group invests in a *Bushfire Risk Management Research* agreement with the Bushfire and Natural Hazards CRC that delivers critical science research to support policy and operational practices. This project '*Scientifically-based Monitoring'* is part of this work and commenced in June 2015. It was completed in June 2018.

The Project

The Scientifically-based Monitoring (MER) project will provide the Department of Environment, Land, Water and Planning (DELWP) with a framework and methods for monitoring, evaluating and reporting on the effects of fuel management and bushfires on ecosystem resilience. This will include design and methods for major state-wide and regional programs of field data collection, as well as protocols for analysing data and reporting results. This capability is integral to DELWP being able to effectively undertake ecological fire management and meet the objectives of the *Code of Practice for Bushfire Management on Public Land (2012).*

Project Outputs

Key outputs of the project include:

- Review and evaluation of past DELWP fire ecology monitoring programs, identifying key lessons for future monitoring.
- An overarching approach for addressing Key Evaluation Questions identified in the Bushfire Monitoring, Evaluation and Reporting (MER) framework.
- Survey design and field methods for state-wide and regional monitoring programs.
- Completion of initial round of field surveys within state-wide monitoring stream.
- Methods for data analysis and reporting to address Key Evaluation Questions.
- Data that will provide more robust ecosystem resilience inputs to fire management planning and allow reporting of the effects of fuel management on biodiversity values.

Policy and Operational Implications

The monitoring and analysis approach developed by the project will allow a more robust calculation of ecosystem resilience metrics (which include: Geometric Mean Abundance, Growth Stage Structure and Tolerable Fire Interval). This in turn, will allow better evaluation and prediction of the effects of planned burning and bushfire on biodiversity, leading to improved integration of ecological values into fire management.

Image 1: Installing a camera trap during pilot field surveys
Photo: Steve Leonard

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The Research Team

The project is being managed by the Bushfire and Natural Hazards CRC and is carried out by researchers from La Trobe University. The project team consists of Dr Steve Leonard, Dr Angie Haslem, Prof Andrew Bennett and Prof Mike Clarke. The researchers are working closely with the DELWP Bushfire Monitoring, Evaluation and Research Unit and DELWP regional staff.

Project Status

The project is now complete. The review of past major monitoring programs carried out by DELWP has been completed.

The team have devised an overarching approach to ecosystem resilience MER. This consists of two streams: state-wide and Bushfire Risk Landscape (BRL)-based MER.

The two-stream approach ensures consistency in data collection and processing across Victoria; allowing 'big picture' ecosystem resilience questions to be addressed, while providing flexibility to address questions/issues relevant at regional or local levels.

In addition, the team have developed survey design and methods for collecting data on flora, habitat, birds and mammals in priority ecosystems across Victoria.

These data will feed into addressing Key Evaluation Questions, as well as informing the ecosystem resilience inputs to fire management planning. A pilot round of data collection took place in 2018, in which approximately 100 sites in Grassy Heathy Dry Forest in western Victoria were surveyed.

The team are continuing work on developing guidance for BRL-based MER and assisting with developing reporting processes.

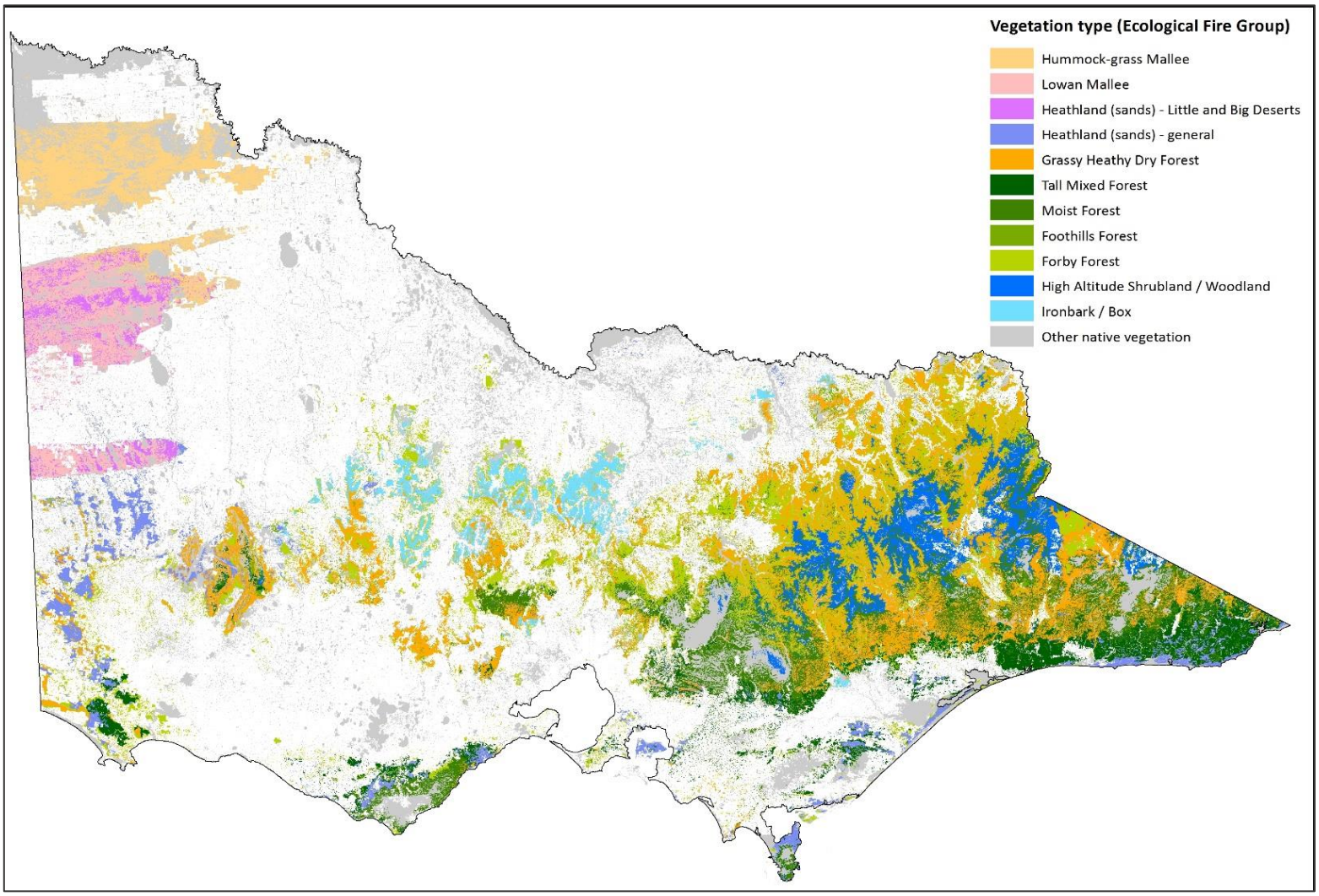

Figure 1: Priority vegetation types for state-wide monitoring