

POSITION DESCRIPTION



Research Fellow in Modelling Vegetation-Fire Interactions in Australia



POSITION DETAILS

Position Title	Research Fellow in Modelling Vegetation-Fire Interactions in Australia
Classification	Level B
Position Number	7016376
School/Office	Hawkesbury Institute for the Environment
Division	Provost

POSITION PURPOSE

The Research Fellow in Modelling Australian Vegetation-Fire Interactions in Australia will contribute to the development of a dynamic vegetation model for Australian vegetation, focusing specifically on the interactions between vegetation, climate and fire. The Research Fellow will apply the model to forecast future shifts in vegetation types and fire regimes and will investigate how future shifts can be modified through active fire management. The Research Fellow contributes to the NSW Bushfire and Natural Hazards Research Centre (BNHRC).

KEY ACCOUNTABILITIES

1. Lead the development and application of the LPJ-GUESS dynamic vegetation model to incorporate interactions between vegetation, climate and fire, and predict changes to vegetation distribution, fuel load and flammability into the future.
2. Synthesise appropriate datasets to develop and test parameterisations of the model for major Australian vegetation types.
3. Develop model capacity to predict how management (e.g. fuel reduction burns) could affect future distribution, composition and structure of natural ecosystems across NSW
4. Engage with First Nations people to incorporate Indigenous perspectives and cultural burning into future projections.
5. Ensure reproducibility of research by appropriate management of data and code.
6. Develop and maintain accurate model documentation and training materials.
7. Manage relationships with internal and external collaborators and stakeholders, including consultation to design research, and meeting milestones and deliverables.
8. Communicate research findings by preparing reports and manuscripts for publication in refereed journals and presenting research findings in relevant fora.

9. Ensure that project research data management conforms to the Australian Code for the Responsible Conduct of Research, and University policies.

QUALIFICATIONS, EXPERIENCE AND SKILLS

1. PhD degree in a relevant research field such as ecosystem ecology, plant ecophysiology, ecohydrology, physical geography. Knowledge of fire ecology would be a major advantage.
2. Strong quantitative skills including experience in computer programming and mathematical modelling. Previous experience working with process-based vegetation models would be an advantage.
3. Strong critical thinking skills including the ability to critically evaluate scientific data and model outputs.
4. Demonstrated organisational skills, including the ability to engage effectively with external project stakeholders and meet project deadlines.
5. Demonstrated ability to write manuscripts for publication in scientific journals with a track record of publications appropriate for the applicant's career stage.

KEY RELATIONSHIPS

- **This position reports to:** Distinguished Professor in Ecosystem / Earth System Modelling (7007281)
- **This position supervises:** N/A
- **Key internal relationships:**
 - Institute Director
 - Director of the Bushfire & Natural Hazards Research Centre
 - Colleagues in the research theme, Institute and across the University
- **Key external relationships:**
 - Stakeholders in the Bushfire & Natural Hazards Research Centre
 - Research collaborators at external institutions

CHALLENGES

- Working with diverse internal and external collaborators to co-design, implement and evaluate research
- Working with project team members to ensure internal consistency and satisfactory performance of the model.
- Ensuring project milestones and deliverables are achieved in a timely manner.

UNIVERSITY EXPECTATIONS

The University expects that all employees are aware of, and comply with legislation and Western's policies and procedures relevant to the position, including but not limited to:

- Code of Conduct
- Work Health and Safety and Wellbeing Management System
- Enterprise Agreement or Award
- Anti-discrimination principles, Equal Employment Opportunity and staff and student equity.

Approved by: Lead People and Culture Partner (Provost)

Date: 25/05/2026