

PhD Opportunities in Fire Ecology

The School of Ecosystem and Forest Sciences is offering two exciting PhD opportunities in fire ecology. The successful candidates will work closely with members of several research groups including the Fire and Biodiversity Group and the Biodiversity Dynamics Research Group. Top-up scholarships of \$24,500 (\$7,000 per year over 3.5 years) are available.

A new, large-scale project on the resilience of fire-prone heathlands

The right kind of fire can promote biodiversity and ecosystem resilience but the wrong kind of fire can threaten plant and animal populations. Heathland ecosystems contain fire-dependent species that nonetheless face threats from inappropriate fire regimes and their interactions with climate, land use and introduced predators. Major knowledge gaps include how the spatial and temporal arrangement of fires influence multiple taxonomic groups and how prescribed fire should be applied to meet conservation objectives.



The University of Melbourne is launching a research project on the ecology and conservation of Victoria's fire-prone heathlands. The project aims to 1) explore how fire regimes shape the resilience of plant and animal populations and 2) assess the effectiveness of fire management in achieving conservation objectives. PhD candidates will join a team of leading scientists from the School of Ecosystem and Forest Sciences. The project is supported by the Department of Environment, Land, Water and Planning (DELWP) and will run from 2020-2023.



PhD positions

Two PhD projects are being offered - one focused on vascular plants and the other on birds. These projects will be developed in collaboration with the students based on their research interests and strengths. Both projects will be underpinned by field studies at up to 200 sites across Victoria.

The study on vascular plants will use data from field studies to inform plant demographic models which, combined with fire regime simulations, will underpin decision-making approaches to evaluate alternative fire scenarios in Victorian heathlands. There is scope to explore ideas about rapid evolution and fire-related traits and to develop new methods for modelling plant population dynamics and extinction risk. This project will be supervised by Dr Luke Kelly, Assoc Prof Trent Penman and Dr Matt Swan.



The project on birds will also include integrating field data and fire behaviour simulations. There is scope to explore ideas about bird movement in post-fire landscapes, the relationship between birds, fire regimes and habitat change and new methods for quantifying animal responses to future fires. This project will be supervised by Dr Matt Swan, Dr Julian Di Stefano and Dr Holly Sitters.



Candidates are welcome to apply for one or both positions.

Successful candidates will be expected to obtain an Australian Government Research Training Program scholarship (RTP) or equivalent. Information about applying for PhD scholarships at the University of Melbourne can be found at: <https://study.unimelb.edu.au/find/courses/graduate/doctor-of-philosophy-science/>



Ideally, students will start at the University of Melbourne in early 2020.

Qualifications, attributes and skills

- A first-class Honours or Masters degree in environmental science or a related discipline.
- A keen interest in conservation biology, fire science, plant and animal ecology, evolutionary ecology and/or ecological modelling.
- Strong interpersonal and communication skills including the ability to work in teams and to communicate research findings in writing and at conferences.
- Experience in ecological modelling, field ecology (including identification of plants and birds) and plant science will be advantageous, but successful candidates will be provided with extensive training in these areas.
- A valid driver's licence is essential, with 4WD experience desirable.



Research environment

The University of Melbourne is one of Australia's most productive research organisations, and home to dynamic groups contributing to Australia's global leadership in fire science. The School of Ecosystem and Forest Sciences provides an outstanding environment for scientific research. The Chief Investigators of this large-scale project work collaboratively to achieve their research goals and regularly publish in leading science journals.



The School of Ecosystem and Forest Sciences is committed to supporting PhD students by providing: an experienced supervisory team, a collaborative research environment that actively promotes diversity, support for field studies, project operating expenses, cutting-edge computing resources and a top-up scholarship of \$24,500 (\$7,000 per year over 3.5 years).

Applicants should email Dr Luke Kelly ltkelly@unimelb.edu.au by 30 September 2019 with 1) a one page cover letter describing your qualifications and skills, your interest in the position and a brief outline of your research goals, and 2) a CV including your academic record and contact details for two referees.



More information about our research groups

Fire Ecology and Biodiversity: <https://www.fireecologyandbiodiversity.com/>

Biodiversity Dynamics: <http://blogs.unimelb.edu.au/biodynamos/>

Bushfire Behaviour and Management: <http://www.bushfirebehaviour.net.au/>

