



## PHD SCHOLARSHIP OPPORTUNITIES

Reference: 2021.CAWS\_ARCDE1

### PhD Scholarship Opportunity: Effect of flow variation on benthic invertebrate or zooplankton communities

We offer an exciting opportunity for a PhD candidate to join the [Centre for Applied Water Science](#) in the Institute for Applied Ecology at the University of Canberra to examine the response of river food webs to variation in streamflow. The scholarships are funded by the Australian Research Council and the University of Canberra.

#### Project description

Human activities have greatly altered the magnitude and timing of flow in rivers worldwide. This has substantial impacts on river ecosystems because flow mediates the physical and chemical environment, regulates connectivity to upstream and floodplain habitats, and supports the life cycle of organisms. The overall project aims to build new knowledge around how changes in flow affect the structure and function of river food webs. The expected outcome of this project is an enhanced capacity to predict the ecological consequences of water management scenarios. This will be achieved through a combination of field work (focused on the Lachlan River system in central NSW) and laboratory experiments.

#### PhD project: Effect of flow variation on benthic invertebrate or zooplankton communities.

Invertebrates perform critical ecosystem processes, but their environmental flow responses have been understudied compared other taxa. This PhD candidate will perform field sampling and laboratory experiments to better understand invertebrate responses to flow.

Questions may include:

- How does flow and flow history affect community composition?
- How do invertebrate communities respond to primary productivity pulses and what are the time lags?
- How does flow affect invertebrate-mediated ecosystem functions (e.g. secondary production, leaf litter decomposition)?

#### Research environment

The position is based at the Centre for Applied Water Science (CAWS) within the Institute for Applied Ecology (IAE) at the University of Canberra. The centre has strengths in basic and applied research to address complex environmental problems. Resources for the project include field vehicles, field equipment and experimental flumes at the University of Canberra. The project team will work in close collaboration with researchers at CSIRO Land and Water. The IAE typically has a cohort of 20-30 PhD students and maintains a program of graduate seminars, social events and administrative support to enhance the PhD experience. The Australian PhD is a 3.5 year program which is largely research, with graduate training opportunities rather than extensive formal coursework.





The candidate will be supervised by the project lead [Dr Darren Giling](#) (University of Canberra/CSIRO) and co-supervised by Prof. LeRoy Poff (Colorado State University, USA), Prof. Ross Thompson (University of Canberra), and Dr Paul McInerney (CSIRO).

### **Eligibility**

To be eligible, the applicant must have a first-class Honours degree or four years of undergraduate study in a relevant field coupled with a publication record to establish first class equivalence, and personal attributes conducive to working constructively and productively as part of research team. Candidates may also be considered if they have a research-focussed Masters degree or equivalent in a relevant field. Experience in laboratory experiments involving animals, skills in animal identification, statistical analyses, and a willingness to conduct fieldwork in remote locations are also desirable.

### **Scholarship**

A three-year scholarship is available (AUD\$27,609 per annum full-time).

### **Application instructions**

Interested individuals should submit their application by email to Dr Darren Giling ([darren.giling@canberra.edu.au](mailto:darren.giling@canberra.edu.au)). Please attach a single PDF file with a 1 page statement on which project you would like to be considered for and why you are interested, a curriculum vitae, transcripts and the names and contact information of 3 referees.

Evaluation of the applications will begin immediately, with an anticipated start date in the second half of 2021.





Reference: 2021.CAWS\_ARCDE2

## PhD Scholarship Opportunity: Effect of flow variation on food-web structure.

We offer an exciting opportunity for a PhD candidate to join the [Centre for Applied Water Science](#) in the Institute for Applied Ecology at the University of Canberra to examine the response of river food webs to variation in streamflow. The scholarships are funded by the Australian Research Council and the University of Canberra.

### Project description

Human activities have greatly altered the magnitude and timing of flow in rivers worldwide. This has substantial impacts on river ecosystems because flow mediates the physical and chemical environment, regulates connectivity to upstream and floodplain habitats, and supports the life cycle of organisms. The overall project aims to build new knowledge around how changes in flow affect the structure and function of river food webs. The expected outcome of this project is an enhanced capacity to predict the ecological consequences of water management scenarios. This will be achieved through a combination of field work (focused on the Lachlan River system in central NSW) and laboratory experiments.

#### *PhD project: Effect of flow variation on food-web structure.*

We currently do not have a robust understanding of how the energy sources of consumers such as fish change through time and in response to flow events. This PhD candidate will characterise the structure of the river food webs by collecting samples of fish, invertebrates, and their potential food items.

Questions may include:

- What is the aquatic food web structure of the Lachlan River and how does it vary spatially and temporally?
- How does flow and flow history alter the major energy sources of consumers?
- How do patterns of material cycling and food-web energy fluxes at short time scales (e.g. daily to weekly) during an environmental flow event?

### Research environment

The position is based at the Centre for Applied Water Science (CAWS) within the Institute for Applied Ecology (IAE) at the University of Canberra. The centre has strengths in basic and applied research to address complex environmental problems. Resources for the project include field vehicles, field equipment and experimental flumes at the University of Canberra. The project team will work in close collaboration with researchers at CSIRO Land and Water. The IAE typically has a cohort of 20-30 PhD students and maintains a program of graduate seminars, social events and administrative support to enhance the PhD experience. The Australian PhD is a 3.5 year program which is largely research, with graduate training opportunities rather than extensive formal coursework.

The candidate will be supervised by the project lead [Dr Darren Giling](#) (University of Canberra/CSIRO) and co-supervised by Prof. LeRoy Poff (Colorado State University, USA), Prof. Ross Thompson (University of Canberra), and Dr Paul McInerney (CSIRO).

### Eligibility

To be eligible, the applicant must have a first-class Honours degree or four years of undergraduate study in a relevant field coupled with a publication record to establish first





class equivalence, and personal attributes conducive to working constructively and productively as part of research team. Candidates may also be considered if they have a research-focussed Masters degree or equivalent in a relevant field. Experience in laboratory experiments involving animals, skills in animal identification, statistical analyses, and a willingness to conduct fieldwork in remote locations are also desirable.

### **Scholarship**

A three-year scholarship is available (AUD\$27,609 per annum full-time).

### **Application instructions**

Interested individuals should submit their application by email to Dr Darren Giling ([darren.giling@canberra.edu.au](mailto:darren.giling@canberra.edu.au)). Please attach a single PDF file with a 1 page statement on which project you would like to be considered for and why you are interested, a curriculum vitae, transcripts and the names and contact information of 3 referees.

Evaluation of the applications will begin immediately, with an anticipated start date in the second half of 2021.





Reference: 2021.CAWS\_GW1

## PhD Scholarship Opportunity: Traditional knowledge and freshwater refugia and the role of groundwater

We offer an exciting opportunity for a PhD candidate to join the [Centre for Applied Water Science](#) in the Institute for Applied Ecology at the University of Canberra to examine the potential role of Australian Indigenous Traditional knowledge in identifying persistent aquatic refugia in the Murray Darling Basin. The scholarship is funded by CSIRO and the University of Canberra.

### Project description

A combination of a drying climate and abstraction of water for human uses has made the identification of long term aquatic refugia in the Murray Darling Basin (MDB) a critical need. Oral history within Indigenous nations within the MDB provides a key thread of evidence in identifying where refugia may have persisted over long periods. Co-supervised by an Indigenous groundwater hydrogeologist and an experienced freshwater ecologist, the knowledge developed by this project will directly inform the development of policy and management.

Questions may include:

- What are the oral records describing water persistence in parts of the MDB?
- Can we associate Traditional Knowledge on water persistence with key groundwater and hydrological characteristics?
- Can we use Traditional Knowledge to understand the role of groundwater in supporting refugia, and their criticality on different time scales?

### Research environment

The position is based at the Centre for Applied Water Science (CAWS) within the Institute for Applied Ecology (IAE) at the University of Canberra. The centre has strengths in basic and applied research to address complex environmental problems. Resources for the project include field vehicles and field equipment at the University of Canberra. The project team will work in close collaboration with researchers at CSIRO Land and Water. The IAE typically has a cohort of 20-30 PhD students and maintains a program of graduate seminars, social events and administrative support to enhance the PhD experience. The Australian PhD is a 3.5 year program which is largely research, with graduate training opportunities rather than extensive formal coursework.

The candidate will be supervised by the project lead and Kamilaroi Assoc. Prof. Bradley Moggridge and co-supervised by Prof. Ross Thompson (University of Canberra) and a CSIRO supervisor (tba).

### Eligibility

To be eligible, the applicant must have a first-class Honours degree or four years of undergraduate study in a relevant field coupled with a publication record to establish first class equivalence, and personal attributes conducive to working constructively and productively as part of a research team. Candidates may also be considered if they have a research-focused Masters degree or equivalent in a relevant field. Experience in groundwater and hydrologic analyses, GIS, statistical analyses, and a willingness to conduct





fieldwork in remote locations are also desirable. Applicants from an Indigenous or Torres Strait Islander background are strongly encouraged to apply.

### **Scholarship**

A 3.5y scholarship is available (AUD\$57,000 per annum full-time).

### **Application instructions**

Interested individuals should submit their application by email to Assoc. Prof Bradley Moggridge [Bradley.moggridge@canberra.edu.au](mailto:Bradley.moggridge@canberra.edu.au). Please attach a single PDF file with a 1 page statement on which project you would like to be considered for and why you are interested, a curriculum vitae, transcripts and the names and contact information of 3 referees.

Evaluation of the applications will begin immediately, with an anticipated start date in the second half of 2021.





Reference: 2021.CAWS\_PLAT1

## PhD Scholarship Opportunity: Understanding the urban ecology of Australia's iconic aquatic mammals

We offer an exciting opportunity for a PhD candidate to join the [Centre for Applied Water Science](#) in the Institute for Applied Ecology at the University of Canberra to examine the ecology of urban populations of platypus and rakali. The scholarship is funded by the ACT Government and the University of Canberra.

### Project description

Platypus (*Ornithorhynchus anatinus*) and rakali (*Hydromys chrysogaster*) are iconic inhabitants of Australia's freshwater environments. While they are widespread and can be present in urban streams and lakes, little is known about their ecology in these environments. There is evidence that both species may be vulnerable to decline due to the impacts of climate change, river regulation and potentially pharmaceutical contaminants in waterways

Questions may include:

- What is the evidence for population decline in these species in the ACT?
- What are the key resources (trophic and habitat) for these species in urban landscapes?

### Research environment

The position is based at the Centre for Applied Water Science (CAWS) within the Institute for Applied Ecology (IAE) at the University of Canberra. The centre has strengths in basic and applied research to address complex environmental problems. The candidate would work in partnership with aquatic ecologists (Centre for Applied Water Science, ACT Government), geneticists (Centre for Conservation Ecology and Genomics), educators (Cohen, Faculty of Science and Technology, UC and Kennett, Questacon) and citizen scientists (Waterwatch). Resources for the project including stipend, field vehicles, field support and field equipment would be supplied by the University of Canberra and the ACT Government. The IAE typically has a cohort of 20-30 PhD students and maintains a program of graduate seminars, social events and administrative support to enhance the PhD experience. The Australian PhD is a 3.5 year program which is largely research, with graduate training opportunities rather than extensive formal coursework.

The candidate will be supervised by the project lead Prof. Ross Thompson with A/Prof Fiona Dyer, A/Prof Mark Lintermans, Prof. Dianne Gleeson and an ACT government supervisor (tba).

### Eligibility

To be eligible, the applicant must have a first-class Honours degree or four years of undergraduate study in a relevant field coupled with a publication record to establish first class equivalence, and personal attributes conducive to working constructively and productively as part of research team. Candidates may also be considered if they have a research-focussed Masters degree or equivalent in a relevant field. Experience in conservation biology, aquatic ecology, habitat assessment GIS, statistical analyses, and a willingness to conduct fieldwork are also desirable.

### Scholarship





A 3.5y scholarship is available (AUD\$30,000 per annum full-time).

### **Application instructions**

Interested individuals should submit their application by email to Prof Ross Thompson [ross.thompson@canberra.edu.au](mailto:ross.thompson@canberra.edu.au). Please attach a single PDF file with a 1 page statement on which project you would like to be considered for and why you are interested, a curriculum vitae, transcripts and the names and contact information of 3 referees.

Evaluation of the applications will begin immediately, with an anticipated start date in the second half of 2021.





**Reference: 2021.CAWS\_NORRIS**

## **PhD Scholarship Opportunity: Richard Norris Post-graduate Scholarship in Applied Ecology**

Thanks to a generous bequest from Emeritus Professor Richard Norris we offer an exciting opportunity for a PhD candidate to join the Institute for Applied Ecology at the University of Canberra. This endowed scholarship is awarded to a promising post graduate research student, primarily in the area of applied ecology. The scholarship is funded by the Richard Norris Memorial Fund and the University of Canberra.

### **Project description**

There is an opportunity for an excellent PhD candidate to develop a project in collaboration with any of the researchers from the Centre for Applied Water Science or the Centre for Conservation Ecology and Genomics. The Centres have particular strength in;

- Aquatic ecology and bioassessment
- Fundamental community ecology and foodweb ecology
- Environmental flow management
- Conservation ecology
- The ecology of urban lakes and streams
- Invasion biology
- Stress ecology and eco-toxicology
- Geomorphology and eco-hydrology
- The application of genetic and genomic tools to conservation management
- Fish conservation biology and management

### **Research environment**

The position is based at the Institute for Applied Ecology (IAE) at the University of Canberra. The centre has strengths in basic and applied research to address complex environmental problems. Resources for the project including stipend, field vehicles, field support and field equipment would be supplied by the University of Canberra. The IAE typically has a cohort of 20-30 PhD students and maintains a program of graduate seminars, social events and administrative support to enhance the PhD experience. The Australian PhD is a 3.5 year program which is largely research, with graduate training opportunities rather than extensive formal coursework.

### **Eligibility**

To be eligible, the applicant must have a first-class Honours degree or four years of undergraduate study in a relevant field coupled with a publication record to establish first class equivalence, and personal attributes conducive to working constructively and productively as part of research team. Candidates may also be considered if they have a research-focussed Masters degree or equivalent in a relevant field.

### **Scholarship**

A 3.5y scholarship is available (AUD\$30,000 per annum full-time).

### **Application instructions**



Interested individuals should submit their application by email to Prof Ross Thompson [ross.thompson@canberra.edu.au](mailto:ross.thompson@canberra.edu.au). Please attach a single PDF file with a 1 page statement on which project you would like to be considered for and why you are interested, a curriculum vitae, transcripts and the names and contact information of 3 referees.

Evaluation of the applications will begin immediately, with an anticipated start date in the second half of 2021.





**Reference: 2021.CAWS\_UrbanSW**

## **PhD Scholarship Opportunity: Understanding the mechanisms that contribute to algal blooms in urban lakes.**

We offer an exciting opportunity for a PhD candidate to join the [Centre for Applied Water Science](#) in the Institute for Applied Ecology at the University of Canberra to understand potential interventions to improve water quality in urban lakes. The scholarship is funded by the ACT Government and the University of Canberra.

### **Project description**

This is an opportunity for an excellent PhD candidate with a background in chemistry, freshwater ecology or lake modelling with an interest in urban water ecology or chemistry to conduct a project addressing one of several knowledge gaps around Urban Water quality using Canberra as a case study location. Working with partners in the ACT Government the candidate will establish a research agenda that seeks to understand intervention points for the prevention of algal bloom formation in urban lakes and the treatment of established blooms. It is likely that analytical chemistry approaches and laboratory experiments will be required to assess potential algal bloom management solutions. Quantitative load models may need to be parameterised and applied.

### **Research environment**

The position is based at the Centre for Applied Water Science (CAWS) within the Institute for Applied Ecology (IAE) at the University of Canberra. The centre has strengths in basic and applied research to address complex environmental problems. The candidate would work in partnership with aquatic ecologists, environmental chemists and engineers within the Centre for Applied Water Science and the ACT Government.

Resources for the project including stipend, field vehicles, field support and field equipment would be supplied by the University of Canberra and the ACT Government. The IAE typically has a cohort of 20-30 PhD students and maintains a program of graduate seminars, social events and administrative support to enhance the PhD experience. The Australian PhD is a 3.5 year program which is largely research, with graduate training opportunities rather than extensive formal coursework.

The candidate will be supervised by the project lead A/Prof Fiona Dyer, with Prof Ross Thompson, Prof Charles Lemckert and an ACT government supervisor (tba).

### **Eligibility**

To be eligible, the applicant must have a first-class Honours degree or four years of undergraduate study in a relevant field coupled with a publication record to establish first class equivalence, and personal attributes conducive to working constructively and productively as part of research team. Candidates may also be considered if they have a research-focussed Masters degree or equivalent in a relevant field. Experience in conservation biology, aquatic ecology, habitat assessment GIS, statistical analyses, and a willingness to conduct fieldwork are also desirable.

### **Scholarship**

A 3.5y scholarship is available (AUD\$30,000 per annum full-time).



### **Application instructions**

Interested individuals should submit their application by email to A/Prof Fiona Dyer [fiona.dyer@canberra.edu.au](mailto:fiona.dyer@canberra.edu.au). Please attach a single PDF file with a 1 page statement on which project you would like to be considered for and why you are interested, a curriculum vitae, transcripts and the names and contact information of 3 referees.

Evaluation of the applications will begin immediately, with an anticipated start date in the second half of 2021.

