LA TROBE UNIVERSITY

Centre for Freshwater Ecosystems

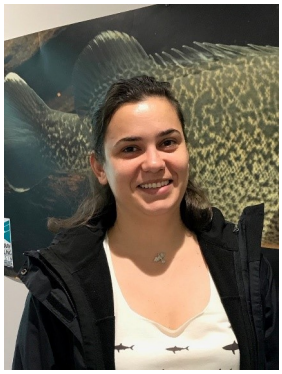
Fact Sheet

MMCP Collaboration

Education capacity building through Postgraduate studies

Student support is an important component of MMCP Collaboration, with postgraduate students able to carry out high-quality research at a reasonable cost and make an important contribution to the development of aquatic research capability. Student support was provided through the provision of competitive (merit-based) PhD 'top-up' scholarships, which was advertised nationally and internationally to attract suitably qualified candidates. These positions were at either the Albury-Wodonga or Bundoora campuses of La Trobe University.

Lorena Nogueira



Completion date: 2019

Supervisors: Amina Price[1], Susan Lawler[1], Paul Humphries[2] and Lee Baumgartner[2]

Water infrastructure and challenges for fish conservation: A trait-based analysis to foresee fish recruitment in regulated rivers

Objective:

Improve the understanding of larval dispersal in three Australian freshwater fish Golden perch (*Macquaria ambigua* Richardson), Murray cod (*Maccullochella peelii*), and Trout cod (*Maccullochella macquariensis* Cuvier, 1829), by investigating ontogenetic shifts in swimming behaviour under a range of simulated flow conditions.

Manisha Skakya

Completion date: 2020

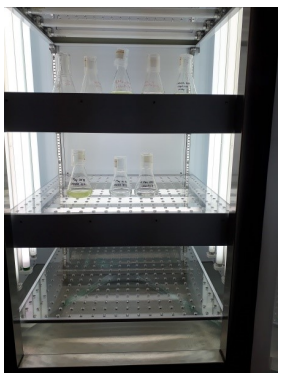
Supervisors: Ewen Silvester[1], Gavin Rees[3] and Aleicia Hollands[1]

Impact of environmental stress on the protein and amino acid composition of fresh-water organisms

Objectives:

⇒ Explore the variation in the amino acid composition of macroinvertebrate taxa collected from seven sites along the Murray River, Australia.

⇒ Investigate how metal contamination within river systems alter the amino acid composition of freshwater organisms.



Further information

MMCP Collaboration (MMCP) is a project supported by the Joint State Governments and the Murray-Darling Basin Authority to generate and adopt freshwater ecological knowledge through collaboration, to maintain research capability and contribute supporting science to underpin the Basin-Wide Watering Strategy.

MMCP Collaboration Final report: doi.org/10.26181/5d19927544b20

Thesis will be available on completion: Online repository

Contact

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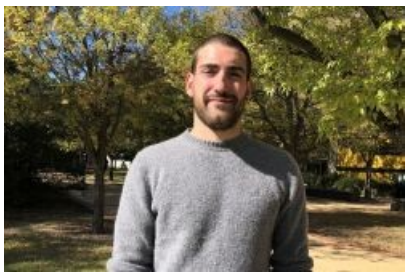
Francesco Colombi



Completion date: 2020

Supervisors: Ewen Silvester[1]

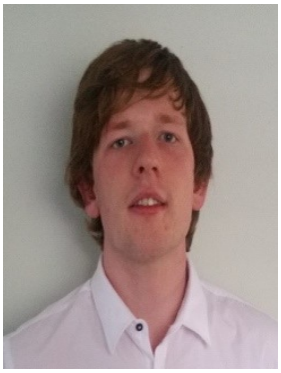
Legacy effects of historical gold mining on floodplains of Victorian rivers

Objectives:

⇒ Investigate the characterization of the physical and geochemical changes that occurred in mine tailings after re-deposition on downstream floodplains and comparison of these tailings with the (relic) underlying floodplain sediments.

⇒ Understanding the chemical form of the re-deposited tailing in order to evaluate their potential bioavailability and environmental fate in these deposits of freshwater organisms.

James O'Dwyer



Completion date: 2021

Supervisors: Nick Murphy[4], Katherine Harrisson[4] and Zeb Tonkin[5]

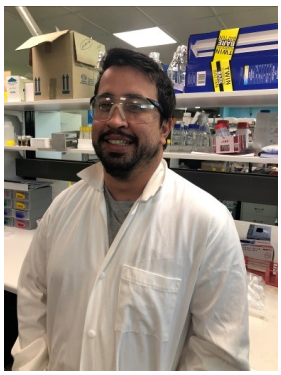
Flows for fish: Using water flow to promote connectivity, recruitment and genetic diversity for Australian fish species

Objectives:

⇒ Use population genomic information to investigate the current state of population structuring and connectivity in four key Australian fish species, Common galaxias (*Galaxias maculatus* Jenyns, 1842), tupong (*Pseudaphritis urvillii* Valenciennes, 1831*)*, Australian grayling *(Prototroctes maraena* Günther, 1864*)* and Murray cod *(Maccullochella peelii)*.

⇒ Provide a detailed genomic exploration of breeding and recruitment dynamics of Murray cod populations and their interaction with river flow.

Lucas Goncalves Morais



Completion Date: 2021

Supervisors: Aleicia Holland[1] and Ewen Silvester[1]

The influence of water chemistry on zinc bioavailability and toxicity in Australian freshwaters

Objective:

⇒ Collate water quality data from across Australia to determine median, 10th and 90th percentiles for pH, DOC and hardness within each state and territory.

⇒ Exposing the microcrustacean *Ceriodaphnia dubia*, to Zn^{II} in artificial and natural freshwaters, simulating realistic ranges for: DOC, hardness and/or pH in Australians rivers, to determine how changes in water chemistry will influence Zn^{II} toxicity to this aquatic organism.

Supervisor affiliations

[1]La Trobe University, Wodonga Vic.

[2]CSIRO Land & Water, Albury NSW

[3]Charles Sturt University, Albury NSW

[4]La Trobe University, Bundoora Vic.

[5] Arthur Rylah Institute for Environmental Research, Heidelberg, Vic.

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