



Research Centre for Freshwater Ecosystems

August to December 2019

Message from the Director

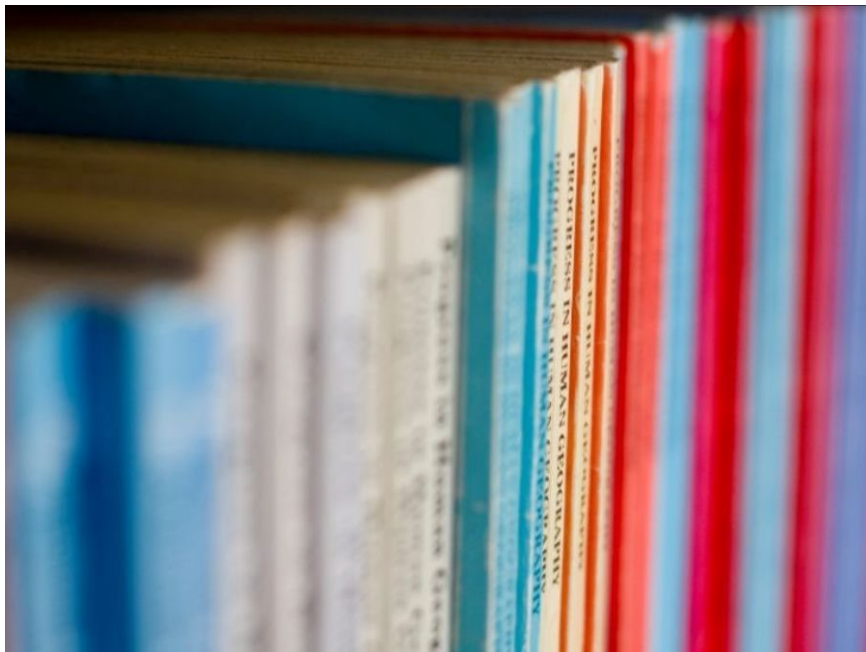
2019 has been a productive and busy year for the Centre for Freshwater Ecosystems, which officially launched in February this year, less than 12 months ago. As well as launching with a new name, we have also seen lots of exciting events over the year, with a broad range of achievements from our staff across our portfolio of research, teaching and external engagement. Highlights include a number of new staff appointments, establishment of a new undergraduate subject in Water Management being taught alongside the existing offering in Freshwater Ecosystems, commencement of a number of new postgraduate students, and a slew of new grants and high quality research publications. This newsletter captures just some of the highlights since August, and I would like to thank all of our staff for contributing to a successful year. On behalf of all Centre members I wish everyone a safe and Merry Christmas and look forward to ongoing collaboration in 2020.

Highlights



Meet Our Members

We welcome opportunities to collaborate with research, government and industry partners. Learn more about our members and their expertise.



Our Publications

Access the Centre's recent research and online publications.

Research

Recent project highlights

As well as completing a number of large multi-year projects such as the CEWO funded Environmental Water, Knowledge and Research project, a diverse range of exciting projects kicked off throughout the year. Highlights among these include;

- Two projects are working with NSW Department of Planning, Industry and Environment to examine the functional role of tributary inflows in achieving productivity outcomes from environmental watering. One of these is taking a desktop approach to review the benefits of unregulated flows and to identify potential hotspots across the Murray-Darling where unregulated tributaries may play a significant role in boosting productivity. The second project has been testing these hypotheses empirically, initially in the Tumut River. This event based sampling has involved a large contingent of field-hardened staff, including Ewen Silvester, Aleicia Holland, Chris Davey, Rochelle Petrie, Thelma Vlamis, Suman Acharya, Anthony Evans and Xiauying Liu (CSU). Additional surveys will take place in the northern basin in 2020 in collaboration with researchers from UNE.
- Modelling risks of blackwater events from environmental watering at Hattah, Mulcra and Linsday Island in the Mallee. CFE is working with Water Technology to quantify litter loads and leaching of DOC to parameterise a hydrodynamic model of blackwater risk at these sites. Rochelle Petrie and Thelma Vlamis.
- Peatland condition and headwater aquatic ecosystems: beyond 'sponges'. This project is a collaboration with the Department of Industry, Innovation and Science funded under the Australian Heritage Grants Program, and involves event based monitoring of water quality within peat bogs near Falls Creek in the Australian Alps. Ewen Silvester, Rochelle Petrie, Olivia Lines and Suman Acharya, Michael Shackleton, Chris Davey and Anthony Evans.
- Ongoing collaboration with University of Melbourne and Melbourne Water to assist with implementing Melbourne Water's new Healthy Waterways Strategy. Central to this work has been the development of quantitative habitat suitability models for river and wetland biota to help identify high priority areas for conservation and management around Melbourne's rapidly expanding urban areas. Nick Bond, Michael Shackleton.

Conference presentations

Centre staff have attended numerous national and international conferences this year, with a significant presence at a number of national meetings, including the recent AFSS meeting in Geelong, and the ASFB meeting in Canberra earlier in the year. A complete list of conference presentations is below.

- Bond N, (2019) Mapping wetland dynamics using remote sensing approaches to assist long-term planning in a rapidly urbanising landscape. Australian Freshwater Sciences Society and New Zealand Freshwater Sciences Society Joint Conference, Waurin Ponds, Victoria, 1-4 December.
- Bond N, Lower Darling River Fish Loss: Findings of the Independent Panel. 2019 Murray Codference, 8 December 2019, Shepparton.
- Crook D, Wedd D, Adair B, Mooney T, Humphrey C, Harford A, King A (2019) Integrating acoustic telemetry with high resolution sonar to elucidate population-level effects of fish movement in a northern Australian stream. Australian Society for Fish Biology Conference, 14-17 October.
- Crook D, (2019) Using dry season fish habitat preferences to inform water decision making in a tropical river. Australian Freshwater Sciences Society and New Zealand Freshwater Sciences Society Joint Conference, Waurin Ponds, Victoria, 1-4 December.
- Holland A, (2019), Current status of metal research in Australasia. Metal Interest Group, Society of Environmental Toxicology and Chemistry (SETAC) North America 40th annual meeting conference, Toronto, 3-7 November.
- Holland A, Stauber J, Macoustra G, Jolley D (2019), The ever-changing nature of DOC – possible implications for metal research. Metal Interest Group, Society of Environmental Toxicology and Chemistry (SETAC) North America 40th annual meeting conference, Toronto, 3-7 November.
- Holland A, (2019) Dissolved organic matter and metabolic dynamics in dryland lowland rivers. Australian Freshwater Sciences Society and New Zealand Freshwater Sciences Society Joint Conference, Waurin Ponds, Victoria, 1-4 December.
- Judd M, (2019) Photo point monitoring: a special role in environmental flow management. Australian Freshwater Sciences Society and New Zealand Freshwater Sciences Society Joint Conference, Waurin Ponds, Victoria, 1-4 December.
- King A, Allsop Q, Buckle D, Crook D, Douglas M, Hammer M, Kennard M, Pusey B, Saunders T, Wedd D (2019) Lessons from fish kills outside of the Murray-Darling Basin: Tracking recovery of the Katherine River fish assemblage after the 2012 hypoxic blackwater event. Australian Society for Fish Biology Conference, 14-17 October.
- Mynott J, (2019) The detection of threatened alpine stoneflies. Australian Freshwater Sciences Society and New Zealand Freshwater Sciences Society Joint Conference, Waurin Ponds, Victoria, 1-4 December.
- Panarelli E, *Nielsen D* and Holland A (2019) Cladocera resistance egg banks in temporary and permanent ponds. XVII Brazilian Limnology Congress and 2nd Ibero-American Limnology Congress. Florianopolis, Santa Caterina, 4 August.
- Shackleton M, (2019) Are we ready for DNA based bio-monitoring? Australian Freshwater Sciences Society and New Zealand Freshwater Sciences Society Joint Conference, Waurin Ponds, Victoria, 1-4 December.

People

Julia Mynott has returned from maternity leave after welcoming Hazel Mia to the world on the 6th August weighing 4.5kg. Another budding taxonomist in waiting! Congratulations Julia!!



[New cadetship student Anthony Evans](#)

Anthony Evans commenced a 10-week cadetship with the Centre for Freshwater Ecosystems in November. Here is what Anthony has to say about his experience thus far:

My cadetship at La Trobe has been what I consider the perfect work experience. I have been able to work on two practically based and fascinating projects as well as to continually work on my professional development as an Environmental Scientist. These projects study water quality parameters to better understand the freshwater ecological functions after a rain event in the alpine peatlands of Falls Creek, Victoria and the Tumut river system in Tumut, New South Wales. Most of my work is partaken within the laboratory, where I

have learnt how to properly prepare samples and then analyse them on a range of equipment. Fieldwork is another major component and a highlight of my cadetship. Fieldwork at La Trobe involves working within a passionate team of people gathering data for analysis in some of the regions most stunning natural landscapes. I am extremely grateful for this opportunity, as well as the enormous amount of mentoring and support I have received from the amazing team of staff at the Centre for Freshwater Ecosystems; in particular my supervisor, Ewen Silvester.



Staff award

Congratulations to Dr Julia Mynott who was awarded the Aquatic Conservation Prize at the Australian Freshwater Sciences Society and New Zealand Freshwater Sciences Society Joint Conference in early December for her talk on 'The detection of threatened alpine stoneflies'. This research presented novel approaches based on the use of trained detection dogs and genetic methods such as eDNA.

New PhD student – Meegan Judd

We welcome Meegan Judd who commenced her PhD within the Centre for Freshwater Ecosystems in August this year. Meegan joins us having worked for many years on river and catchment management issues with the Goulburn Broken Catchment Management Authority. Meegan is being co-supervised by Dr Avril Horne from University of Melbourne and her research will explore the challenging issue of how environmental flows planning and management can adapt to a changing climate and reduced water availability.

<https://www.latrobe.edu.au/freshwater-ecosystems/programs/postgraduate/meegan-judd>



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