

# Applied Aquatic Ecology

Arthur Rylah Institute for Environmental Research

Summer 2018/19 Update

## About Us

The Applied Aquatic Ecology group aims to generate and share knowledge, through world-class, applied, ecological research, which supports and guides sustainable ecosystem policy and management to ensure healthy, resilient ecosystems. We work collaboratively with national, state and local agencies, research institutes, universities, interest groups and the community.

## Highlights

1. AAE is excited to introduce five **new staff** - Gabriel Cornell, Lyndsey Vivian, James Shelley, Tim Brown and Annique Harris.
2. There has been a recent construction blitz of grazing enclosures for the **WIMP (Wetlands Intervention Monitoring Program)**. This long-term program is monitoring the responses of wetland vegetation to different grazing management practices at 29 sites.
3. ARI staff gave 10 presentations at the **International Conference on River Connectivity** in Albury last December. ARI also led some tours and was represented on the Organising Committee. The conference brought together >350 researchers and managers from more than 30 countries.
4. Freshwater eels travel 1000s of kilometres to spawn somewhere in the Coral Sea. A new project will use innovative **satellite tracking** to identify their migration routes and spawning areas. This is a collaboration between DELWP, the Gunditjmarra Traditional Owners, the Glenelg Hopkins Catchment Management Authority (GHCMA), and a Danish eel expert Professor Kim Aarestrup (funded by DELWP).
5. **Native Fish Report Card** project – recent surveys have yielded exciting results, including new records of two threatened species - the Australian Grayling in the Glenelg River (the first in 122 years!) and Cox's Gudgeon in the Mitchell and Wonnangatta rivers (the first in nearly 40 years).

## Output Highlights

- [Lieschke et al.](#) (2019) Extending the effectiveness of electrofishing to estuarine habitats: Laboratory and field assessments. This is soon to be a **Feature article** in Transactions of the American Fisheries Society.
- [Sparrow et al.](#) (2018) A proposed method and case study for detection of change in waterway health due to flow. In: Hydrology and Water Resources Symposium (HWRS 2018): Water and Communities. Melbourne: Engineers Australia, 2018.
- [Stuart and Marsden](#) (2019) Evaluation of cone fishways to facilitate passage of small-bodied fish. Aquaculture and Fisheries.
- [Lyon et al.](#) (2019) Effects of tag type, morphological location and tagger experience on tag retention rates in freshwater fishes. Marine and Freshwater Research.
- [Koehn et al.](#) (2019) Fish and flow management in the MDB: Directions for research. Ecological Management and Restoration.



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Photos: ARI staff at the International Conference on River Connectivity; time lapse cameras are tracking vegetation changes in grazed and ungrazed enclosures; Cox's Gudgeon; a stream gauging station; eels will be satellite tracked

## Influencing change

- Ten AAE staff contributed to an **IUCN assessment of the threatened status of Australian freshwater fishes workshop**. This five day event, held at Monash University, was attended by >30 fish experts from all Australian jurisdictions to assess 245 fish species.
- ARI has commenced a **Native Fish Recovery Strategy for the Glenelg River Basin**. The project will support the long-term recovery of native fish populations in the Glenelg River and key tributaries, guiding actions to supporting an ecologically healthy and resilient river (funded by GHCMA).
- A stakeholder forum was held recently at ARI for two large, long-term monitoring programs – **VEFMAP** (Victorian Environmental Water Monitoring and Assessment Program) and **WetMAP** (Wetland Monitoring and Assessment Program for environmental water). This forum brought together about 50 participants to review progress, gain feedback and discuss future research and monitoring needs.
- ARI continues to provide advice to DELWP regarding the distribution of **threatened galaxiid species** and how they may be impacted by fires and fire suppression activities.

## Knowledge transfer and engagement

### Presentations and participation - stakeholders and community groups:

- *Presentations, workshops and forums:* ARI seminars (Vivian – Moira Grass Plains of Barmah Forest), O'Connor (Fishways – past, present and future); regional Environmental Water Advisory Group meetings – for Campaspe River and Macalister River (Tonkin, Jones); River Basin Management Association (O'Connor - fishways); MDBA – Murray Cod population model workshop (Todd, Koehn, Tonkin); Melbourne Water (Koster – Australian Grayling); Carbon Drawdown Potential of Australian Wetlands National Workshop (Papas); East Gippsland CMA workshop (Estuary Perch population modelling (Koehn).
- Check out:
  - Fish in Supplementary Habitats – Southern Pygmy Perch [video](#) and [fact sheet](#).
  - Fish Friendly Stream Gauging Station Program [fact sheet](#)

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