

# Annual Report

Creating  
water  
wisdom for  
healthy  
communities  
and a  
healthy  
planet

# 2022



# 2021-2022, a BIG Team effort.

The collaborative nature of WaterRA continues to break through established boundaries crossing disciplines and industries, redefining the way the water sector works and creating a blueprint for an integrated future.

**2021-2022 once again revealed the ongoing support of our BIG Team — our unique network of members, alumni, staff, Board and trusted partners — to be the driving force behind our continued delivery of research, innovation and capability that supports public health and safeguards the sustainability of our water sources.**

Our members collectively shaped projects to their needs from the outset, ensuring both a customised solution for project participants and broader industry benefits.

Our unique ability to leverage our members' investment in our projects through co-funding and in-kind contributions by other members, and by seeking non-member investment once again stood alongside our core principle of collaboration to generate value-for-money outcomes.

Most notably through delivery of our research portfolio, this year has seen:

- The commencement of 8 new tailored research projects, the completion of 4 projects, as well as 20 projects in-progress, all co-designed and many co-delivered, to address our members' most critical challenges and strategic goals.
- WaterRA lead industry consortia key participants of three successful CRC bids —CRC SAAFE, One Basin CRC and CRC CARE— designed to ensure water industry needs and aspirations

are embraced by these CRCs, and the water utility voice heard in emerging fields of research. One of the largest WaterRA led water industry consortia will be for the CRC for Solving Antimicrobial Resistance in Agribusiness, Food, and Environments (SAAFE). AMR is an emerging threat spreading between farms, in feed and food production systems, and in waste processing. Through this consortium the water industry will be well-placed to develop solutions that help Australian industries stay on top of this risk, ensuring we remain a top producer of premium food and beverage products.

- The development of hydrogen economy research that will look to repurpose wastewater generated in Australia's major cities for production of hydrogen and water treatment chemicals. Our members' hope to develop an understanding of the impacts of water impurities on the performance of water electrolyzers for hydrogen production, and subsequently develop guidelines for their durable design and operation so that existing wastewater treatment plants can be upgraded to improve Australia's energy generation capabilities.
- A continuation of our long history and strength in collaborative cyanobacteria research. Through seed funding from the 5th International Conference on Toxic Cyanobacteria (ICTC-V) we have expanded our research in this highly-important area.

Throughout the year we have also delivered multiple pathways for members to come together and create and access new knowledge and tools, including

through the launch of ECHIDNA — WaterRA's Emerging Chemical Database of National Awareness.

Our R&D Test Bed Inventory likewise is an online tool which maps R&D testbed facilities across Australia to increase connectivity between industry and researchers, and allow utilisation, uptake and efficiency across the sector.

The release of these online tools is a direct outcome of our Digital Transformation strategic initiative which began in 2020 and is continued in our new 2021-2026 five-year strategy. Behind the scenes we have dedicated a huge amount of effort and resources to Digital Transformation and the results are beginning to bear fruit. In addition to increased online tools, we will soon launch an improved Member Portal that will become our members' destination to collaborate, innovate and make an impact with the WaterRA BIG Team. Both the soon-to-be-released website and Member Portal have been designed to be faster, easier to navigate, and more user-friendly and secure.

All of this is but the first stage of our digital transformation, and we will continue to refine functionality and include more tools and resources into the future, ensuring members a better experience with WaterRA.

The strength and success to date of our five-year strategy is further highlighted through:

- Continued delivery of engaging virtual events, ensuring that no matter the restrictions on individuals, these are not a barrier to enhancing knowledge or being collaborative. Most notably, we have delivered 16 member events digitally, including Horizon our annual planning workshop for utilities.
- Renewed personal connection with members with approximately ten member visits conducted since the easing of many national travel restrictions.
- The growth of our Research Leadership Program extending capability within the water sector through the return of 'R for Water Professionals' and the introduction of our Health Based Targets (HBT) training series aimed directly at expanding capability within our utility members.
- Enhanced learning opportunities and exposure to top quality training through the Australian Water School (AWS) including tailored training designed specifically for individual member organisations.

With our five-year strategy now fully underway we keenly look forward to supporting the needs of all our members throughout the upcoming year, continuing to drive and a dynamic portfolio of research aligned to national priorities and by providing opportunities for us to shape the sector's future together.



**Mark Gobbie** Board Chair



**Karen Rouse** CEO

# Collaboration driving innovation.

Our research portfolio continues to bring together water utilities to define shared challenges and create a sectoral approach to solutions for the betterment of the communities they serve. Some of our FY2021-2022 highlights include:

## CRC SAAFE

The Federal Government awarded \$34.5 million to a new partnership to improve the resilience and profitability of Australia's food and agribusiness through understanding the threat of antimicrobial resistance.

The Solving Antimicrobial Resistance in Agribusiness, Food and Environments (SAAFE) Cooperative Research Centre (CRC) will leverage an additional \$115 million in cash and in-kind contributions from 70 partners, working across five states and territories, and will operate over a ten-year period.

Led by Professor Erica Donner of UniSA, CRC SAAFE will tackle resistance to essential antibiotics, antifungals and antivirals that, if not addressed, could wipe up to \$283 billion from the Australian economy by 2050.

New technologies deployed will include IoT sensors, genome sequencing, artificial intelligence and advanced analytics. CRC SAAFE partners will develop solutions such as waste treatment technologies and new animal feeds and supplements.

WaterRA has partnered with CRC SAAFE to enable the research needs of the water industry to be met throughout the CRC's ten-year duration. By bringing together the water sector within a single consortium, WaterRA will assist the sector to develop and deliver a one-health approach to understanding and addressing risks and opportunities that the AMR challenge brings.

This initiative will see our members working to protect Australia's reputation and status as a provider of high-quality water and agricultural products internationally, the long-term viability of water reuse and reducing the risk of AMR-related agricultural trade barriers.

Being at the forefront of new developments in AMR management practices and by addressing factors that can reduce disease burden (such as water quality and waste management), developing alternative interventions, and ensuring appropriate and effective treatment, the CRC will deliver both immediate and medium term benefits to industry, through outcomes such as improved treatment options, and water recycling benefits to the agribusiness community.

## ColoSSoS

Participation this past year from many member organisations in our award-winning Collaboration on Sewage Surveillance of SARS-CoV-2 (ColoSSoS) Project (#2060) continues to demonstrate how WaterRA's 360° view generates implementable solutions. The techniques developed by industry, researchers, consultants and regulators for wastewater surveillance of SARS-CoV-2 throughout Australia during the pandemic have now been trialled in both low prevalence case settings as well as during the height of the Australian outbreaks. The solutions have confidently been adapted and applied in these scenarios in the Mekong Region of South-East Asia, as well as Fiji via an Australian Water Partnership (DFAT) funded project. Techniques developed through ColoSSoS have also been documented in official guidance issued by the World Health Organization.

Building on ColoSSoS we have broadened our horizons to focus on wastewater-based epidemiology as a whole. We have established a Community of Practice that meets monthly, and as part of this are facilitating workshops to develop national capacity in variant surveillance, and population normalisation and quantification.

Our wastewater sampling methodology decision support flowchart currently in design and due for publication in November 2022 – is a quick visual reference guide for practitioners of wastewater monitoring. Practical guidance notes are included to flag with the user certain aspects that are important to consider to ensure sample integrity and laboratory withholding times.

Our "Action Research Report on Good Practice for the Sampling and Analysis of SARS-CoV-2" (replacing the Good Practice Guide) is currently under development and will be ready before the end of the year. It will be a summary of the way wastewater surveillance of SARS-CoV-2 evolved throughout the pandemic, the methodologies developed, and what work is ongoing/still required.

The Walter and Eliza Hall Institute of Medical Research has used funding raised from the ColoSSoS Project to undertake WaterRA Project 2078 on "Whole genome sequencing of SARS-CoV-2 to detect novel variants" – the project will be completed by the end of 2022.

# Collaboration driving innovation.

## Value of Research

WaterRA's Value of Research Project (#1118) has continued to build upon its success. The project has determined a successful pathway for good practice valuation of research undertakings – including outcomes and outputs – that relies on a combination of evaluation processes and organisational culture.

The Good Practice Essentials Guide, released this year, is a summary of the Good Practice Guide. The Essentials Guide distils the fundamental elements and core principles of achieving value from research, providing easy to follow guidance and key questions that help drive and measure value creation and impact throughout the research lifecycle.

Phase 3 of the project will launch our Research Value Analyser online tool which offers organisations the ability to assess their status and progress towards achieving the value and benefits of the research they undertake and, ultimately, enable benchmarking across the water industry and its research collaborators.

## ECHIDNA – Emerging Chemical Database of National Awareness

A key deliverable of Project 1127 – Development of management system for emerging contaminants within the water industry – ECHIDNA is a searchable online database designed to equip the water industry with relevant information to make evidence-based and informed decisions around the management of chemicals of emerging concern (CEC).

Featuring classification and filtering functionalities, An inbuilt risk prioritisation tool and direct links to information on management options to address the risk of environmental and human health effects the database has over 200 subscribers to date and proved proved a useful tool for utilities, regulators, researchers, and consultants. The database is undergoing developments on advanced features to make it more powerful in screening risk assessments and identifying additional research needs.

## Hydrogen economy

Monash University with Southeast Water, Melbourne Water, Yarra Valley Water and Water Corporation, through WaterRA, are looking at ways to produce hydrogen energy more sustainably by repurposing wastewater.

The Sustainable Hydrogen Production from Used Water project (#1136), which also received an ARC Linkage grant, aims to address the challenge of water scarcity in the process of hydrogen production by developing an innovative approach that repurposes wastewater as the feed for hydrogen production through water electrolysis – the process of using electricity to split water into hydrogen and oxygen.

Researchers will look to advance the practical applications of water electrolysis for scalable and sustainable hydrogen production and help Australia secure a leading position in the global emerging hydrogen economy.

With demand for hydrogen exported from Australia by 2040 expected to be more than three million tonnes each year, resulting in around \$10 billion each year for the Australian economy, the project has the potential to contribute significantly to supporting global clean energy markets.

## R&D Test Bed Inventory

Our R&D Test Bed Inventory is designed to enable those developing and piloting technologies for the water sector access to researchers, new technology and capability providers, and other innovators to connect, collaborate and discover test facilities appropriate for their needs.

It will also amplify work being done at the Australian Test Bed Facilities by connecting the right partners for testing, ensuring applicability of test results and widely accepted test data.

Development of this initiative is ongoing and we are currently working in collaboration with our trusted partners, the Water Services Association of Australia and Water Research Foundation, to update the map with a global representation of test bed facilities.

Our research portfolio continues to bring together water utilities to define shared challenges and create a sectoral approach to solutions.

RESEARCH

8  projects started in 2021-2022

60+ active projects 

40+ industry partners

30 research agencies

20  new project opportunities

4  research projects completed

\$ 1.84m worth of investment in newly started and completed projects

Completed projects

Management system for emerging contaminants within the water industry  
Project 1127



ColoSSoS | Inter-laboratory Study  
Project 2071



Smart monitoring for microbial risk assessment  
Project 1103



The impact of oxidants on cellular integrity during cyanobacterial blooms  
Project 1104



Factsheets

Hydrogen economy based Advanced Oxidation Process  
Project 1136



$\beta$ -Methylamino-L-alanine (BMAA) Knowns and unknowns!



Chemicals of Emerging Concern ECHIDNA  
Project 1127



# Curiosity driving leadership.



Our Research Leadership Program (RLP) continued to build upon successful foundations with the release of more training opportunities and an innovative approach to leadership development, Reverse Mentoring.

## Mentoring opportunities enhanced

Our reverse mentoring program pairs a senior leader with someone new to the workforce to enable them to keep pace with the changing world.

Launching in May 2022 as an addition to our traditional mentoring program, reverse mentoring has been designed so a younger employee can help build the skills of senior leaders in an organisation and in turn senior leaders in the water sector gain fresh perspectives from the next generation of talent including on emerging trends in the workplace or in areas of new technology and research.

This initiative has been gaining momentum within our member organisations and with 20 new associate students it will continue to expand into the future.

## First Nations water professional joined the RLPAC

This year a First Nation's position was created on the Research Leadership Program Advisory Committee to provide insight and assist in shaping our RLP and First Nations Pathways initiative so that it makes a positive contribution to the health and wellbeing of First Nations communities. This action was taken based on the principle 'nothing about us without us'. Proud Noongar woman Casey Kickett submitted an extraordinarily strong application and was awarded the position.

## Understanding Health Based Targets event series

This year the RLP delivered an introduction to Health-Based Targets (HBTs) for industry professionals. This series provided over 100 participants with a better understanding surrounding the use of HBTs, what industry has learned, key barriers, pitfalls, benefits, and how HBTs could be applied to a water business.

Delivered through two online sessions and an in-person workshop, participants gained insights into whole-of-system risk from an integrated water management perspective and were introduced to a suite of tools that address key HBT issues across small to large scale systems. Discussions were centred around key business groups likely to benefit from the use of HBTs, such as those responsible for catchments, reservoirs, treatment, distribution, and end use/discharge.

## Data Science for Water Professionals | R Workshops

The highly sought-after R for Water Professionals training provided 62 members across 5 sessions with the opportunity to learn the basics of data science using the R language to analyse water management problems.

Participants used practical examples of water quality, customer experience and smart metering from the water industry to help develop skills to undertake complex data analysis and visualisation. Delivered in two stages, with multiple sessions held across the year, participants were able to gain an understanding of the foundations of practical data science in level 1 and then build upon and expand those skills to create value from data in level 2.



### Student Graduations

**Damien Moodie | RMIT & Melbourne Water**

Fate, behaviour & ecological impact of biosolids derived fluorinated surfactants

**Casey Huang | UQ & WaterRA**

Understanding the biofilm ecology of *Legionella* in drinking water distribution systems

**Drew Szabo | UoM & Melbourne Water**  
Environmental fate & ecological impact of wastewater derived PFAS

**Peter Wardrop | UQ, UoM & Melbourne Water**

Optimising anaerobic lagoons for improved energy production from waste

### Student Award

Nancy Millis Memorial PhD Award for 2022

**Mariah Sampson | Deakin University & Barwon Water**

Evaluating riparian buffer zones in temperate streams

33 mentors  
33 mentees

PAIRED WITH

2 new PhD students

20 new associate students  
including ITTC students

12 sponsor & partner organisations





# Industry-designed technical training.

This year, the AWS delivered 24 webinars, 20 online courses and saw its on-demand course catalogue swell to 28. Attracting over 1500 real-time attendees in online courses (both live and on-demand), over 16,000 registrations to our webinars with a reach of 24,000 subscribers across 185 countries.

## Australian Rainfall and Runoff (ARR) to the extreme | webinar

In response to the highest rainfall intensities ever recorded in New South Wales and Queensland in February and March 2022, AWS released 'ARR - to the extreme'. This panel event was the biggest AWS event to date and saw over 2,000 individuals join online, including over 250 WaterRA members, to learn more about the Intensity Frequency Duration (IFD) data and what it means for flood modeling and project planning implications for the water sector and the communities they serve.

With the success last year of our Australian Rainfall and Runoff series we also increased our focus on delivering series based courses including:

## Hydrology and Hydraulics Essentials training series

Hydrologic and hydraulic modelling software packages are becoming increasingly powerful, with impressive abilities to run countless iterations and display realistic flood inundation scenarios; however, a basic understanding of the underlying concepts is key in correctly interpreting, applying and presenting results.

Working in collaboration with industry and academic experts, Hydrology and Hydraulics (H&H) Essentials training series kicked-off with 2 free webinars then covered 8 individual intensive 3-hour courses, each focusing on a key principle of hydrology and hydraulics. Hosted by experts in their field, over 100 attendees signed up to the series and were introduced to best practice techniques and approaches covering theoretical background material and practical applications, including examples and case studies, allowing them to apply the knowledge to appropriately select input variables, troubleshoot, and interpret results.

## HEC-RAS training series

Developed by the US Army Corps of Engineers, HEC-RAS is one of the world's leading publicly available software packages that models the hydraulics of water flow through natural rivers and other channels and finds particular application in floodplain management. Our HEC-RAS training series taught over 300 attendees how to build, run, animate, interpret and troubleshoot models from scratch using the latest version of HEC-RAS. Catering for both beginners and advanced users, the series enabled attendees to build their skills piece-by-piece, through every course and understand all aspects of HEC-RAS.



**20** online courses

**28** on-demand courses

**24** webinars

**1500+**

real-time attendees online

**16,700+**

webinar registrations

**24k+**

subscribers across 185 countries

**152,000+**

YouTube views

# Engagement through events.

15 events

8 technical training workshops

101 expert presenters

26 featured member organisations

## ColoSSoS Symposium

The COVID-19 pandemic has had a global impact. For a long time, Australia has been in a unique position of having relatively low case numbers, which positioned the country to drive the development of detection methods for SARS-CoV-2 virus fragments at low levels in wastewater. Work has continued to refine wastewater testing as a public health reporting tool, with many lessons learned along the way which have been shared with the global water industry.

The ColoSSoS Symposium showcased WaterRA's innovative and collaborative Australia-wide investigation, ColoSSoS (Collaboration on Sewage Surveillance of SARS-CoV-2) and how it developed novel methods for the detection of SARS-CoV-2 in wastewater enabling health departments across Australia to integrate reliable detections of the SARS-CoV-2 virus in sewage with clinical health data for COVID-19.

The Symposium, watched by over 200 participants, explored how collaborative research has been key to the success of ColoSSoS, and how the industry plans to continue to undertake research around variant detection and the mobility and persistence of the SARS-CoV-2 virus in sewer networks.

## Catchment Forum 2021

Conceived by our Catchment Management Community of Interest, this online forum is focused on exploring evidence-based solutions for maintaining healthy catchments in challenging times and designed for catchment managers, water security/resilience managers, environmental engineers and water and health regulators.

The 2021 Catchment Forum saw over 140 participants explore key issues in catchment management. It brought together water quality experts, health regulators and government to share the latest across the research in this area. Some of the challenges addressed include climate change, low and variable reservoir levels, recreational access to drinking water catchments, conducting sanitary surveys, understanding health-based targets, understanding emerging contaminants in the catchment, and Anti-Microbial Resistance (AMR) in the environment.

## Extreme Events webinar series

With more frequent extreme weather events being part of Australian life, we need to be more vigilant and focused on turning our water supplies into sustainable systems capable of withstanding such shocks.

WaterRA's three-part webinar series on bushfires, floods, and drought investigated how the sector has been impacted by events in the past and changed its practices as a result, and explored opportunities for new systems and ways of thinking that can help us prepare for future events. Each webinar in the series featured industry experts in managing water quality and quantity in extreme events.

## 7th Australian and New Zealand Cyanobacteria Workshop

Australian water sources, both natural and man-made, are regularly afflicted by cyanobacterial (blue-green algal) blooms. Our workshop was an integral part of the global water calendar that provided a platform for researchers and managers in the health and water sectors to meet, discuss current knowledge, share new findings and combine their expertise for national benefit.

The 2021 Workshop was a two-day virtual event, with 30 presentations and 130 participants showcasing new research advancements and their potential applications to ensure the ongoing health of ecosystems and communities.

# Our Financial Position

The WaterRA Board and management are committed to invest in, and improve member experience, the BIG team and the organisation in line with our five-year strategy to benefit all. Over the years prior to the pandemic as well as in 2019-2020 and 2020-2021, WaterRA has delivered healthy annual surpluses and built up our financial reserves.

2021-2022 was the first year of our new Board approved five-year strategy which included the renewal of our website and project management system to provide Members with a more seamless and user-friendly experience. Investment in these new systems was approved by the Board in the 2021-2022 Budget resulting in a planned deficit. Our strong performance during 2021-2022 however resulted in a smaller than anticipated deficit while also ensuring these systems renewals progressed to plan.

The summarised financial reports (below) have been derived from WaterRA's full report for the financial year. For the detailed Financial Report please visit [waterra.com.au](http://waterra.com.au)

## Income Statement For The Period Ended 30 June 2022

	2022	2021
	\$	\$
<b>REVENUE</b>		
Revenue from continuing operations	3,203,226	5,620,942
Other income	495,070	200,076
<b>EXPENDITURE</b>		
Research program	(838,514)	(2,925,950)
Education program	(115,736)	(89,047)
Operating expenses	(2,725,966)	(2,368,843)
Depreciation and amortisation expense	(20,981)	(19,314)
Chairman & Ind Director remuneration	(55,767)	(51,740)
<b>Surplus/(Deficit)</b>	<b>(58,668)</b>	<b>366,124</b>

The company is a not-for-profit entity, registered as a charity and is exempt from income tax.

## Financial Position As At 30 June 2022

	2022	2021
	\$	\$
<b>ASSETS</b>		
<b>Current assets</b>		
Cash and cash equivalents	7,664,896	6,819,632
Trade and other receivables	28,810	58,432
Contract assets	493,599	310,888
Prepayments	54,932	21,541
<b>Total current assets</b>	<b>8,242,237</b>	<b>7,210,493</b>
<b>Non-current assets</b>		
Plant and equipment	-	988
Intangible assets	10,000	8,000
Right-of-use assets	31,991	47,987
<b>Total non-current assets</b>	<b>41,991</b>	<b>56,975</b>
<b>Total assets</b>	<b>8,284,228</b>	<b>7,267,468</b>
<b>LIABILITIES</b>		
<b>Current liabilities</b>		
Trade and other payables	432,556	324,005
Contract liabilities	4,543,889	3,771,977
Lease liabilities	16,151	15,994
Employee entitlements	170,045	135,161
Other	956,430	801,015
<b>Total current liabilities</b>	<b>6,119,071</b>	<b>5,048,152</b>
<b>Non-current liabilities</b>		
Lease liabilities	16,308	32,459
Employee entitlements	27,122	6,462
<b>Total non-current liabilities</b>	<b>43,430</b>	<b>38,921</b>
<b>Total liabilities</b>	<b>6,162,501</b>	<b>5,087,073</b>
<b>Net assets</b>	<b>2,121,727</b>	<b>2,180,395</b>
<b>EQUITY</b>		
Retained earnings	1,871,727	1,930,395
Operating Reserves	250,000	250,000
<b>Total equity</b>	<b>2,121,727</b>	<b>2,180,395</b>

# Our Board and Committees.

OUR BIG TEAM

## Board



**Mark Gobbie**  
Chair



**Ken Murphy**  
Non-Executive Director (Independent)



**Dr David Bergmann**  
Non-Executive Director



**Assoc Prof Helen Stratton**  
Non-Executive Director



**Steven Porter**  
Non-Executive Director



**Prof Stephen Gray**  
Non-Executive Director



**Dr Daniel Hoefel**  
Non-Executive Director



**Deb Evans**  
Non-Executive Director

## Committees

### Strategic Advisory

**Prof Stephen Gray** (Chair) | Victoria University

**A/Prof Helen Stratton** (Deputy Chair)  
Griffith University

**Prof Alex Brown** | University of Adelaide  
and SAHMRI

**Helen Forte** | Water Corporation

**Graham Hawke** | Phoenix Australia

**Dr Gary Lum** | Commonwealth Department of Health

**Steven Porter** | Power and Water Corporation

**Prof Xiwang Zhang** | University of Queensland

**Dr Annette Davison** | Risk Edge

**Karen Rouse** (Secretary) | WaterRA

### Research Leadership Program Advisory

**Dr Louise McKenzie** (Chair) | Hunter Water

**Dr Michael Bartkow** (Deputy Chair) | Seqwater

**Dr Bradley Clarke** | University of Melbourne

**Casey Kickett** | Independent Committee Member

**Dr Melita Stevens** | Melbourne Water

**Dr Kathryn Linge** | ChemCentre

**Dr Meena Yadav** | SA Water

**A/Prof Rita Henderson** | UNSW\*

**Peter Spencer** | Water Corporation\*

### Risk and Audit

**Deb Evans** (Chair) | Water Corporation

**Ken Murphy** | Independent Director of WaterRA

**Gary Penn** | Independent Committee Member

**Dr Dan Hoefel** | AWQC

**Anna Jackson** | AWQC\*

**David Sheehan** | Coliban Water\*

### Human Resources

**Dr David Bergmann** (Chair) | South East Water

**A/Prof Helen Stratton** | Griffith University

**Rolfe Brimfield** | Independent Committee Member

**David Sheehan** | Coliban Water\*

**E/Prof Christopher Saint** | UniSA\*

\*NOTE: Partial year representation, not on committee as at June 30, 2022.

## Farewell

This year we said farewell to non-executive Directors Anna Jackson, David Sheehan, Rita Henderson and Christopher Saint who stepped down as Board Directors.

# Our Staff.

OUR BIG TEAM



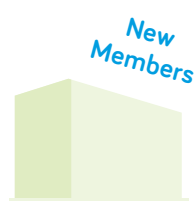
## Farewell

This year we said farewell to our Senior Research Manager Dr Kelly Hill after six-years of dedication to our members. During her tenure Kelly spearheaded WaterRA's collaborative research on catchment management, recreational access, antimicrobial resistance and wastewater-based epidemiology. Most notably Kelly co-created and led our ColoSSoS Project – Collaboration on Sewage Surveillance of SARS-CoV-2 – the water industry's response to the COVID-19 pandemic.

# Our Members.

We are grateful for the support of our BIG Team, as they are the lifeblood of WaterRA. Their tireless efforts allow us to continue to develop research and tools that have a lasting impact and enable us to reach out to other professionals, organisations, and communities in the wider water sector.

In 2021-2022 we were delighted to welcome new members:



IBL Solutions



Sydney Water Laboratory Services

Department of Environment, Parks and Water Security (NT)

## Our Members

- Arris
- Atom Consulting
- Australian Water Quality Centre
- Barwon Water
- Cairns Regional Council
- Central Highlands Water
- Centre for Appropriate Technology
- Charles Darwin University
- ChemCentre
- Coliban Water
- CSIRO
- Curtin University of Technology
- Deakin University
- Department of Environment, Parks and Water Security (NT)
- Department of Health - Environmental Health Northern Territory
- Department of Health Tasmania
- Department of Health Victoria
- Department of Health Queensland
- Edith Cowan University
- EPA SA
- Eurofins

- Federation University
- Flinders University
- GHD
- Gippsland Water
- Goulburn Valley Water
- GWM Water
- GrapheneX
- Greater Western Water
- Griffith University
- Hydrology and Risk Consulting (HARC)
- HydroNumerics
- Hunter Water Corporation
- IBL Solutions
- Icon Water
- Lower Murray Water
- Melbourne Water
- Monash University
- Murdoch University
- National Measurement Institute
- Natural Logic
- North East Water
- NSW Health
- Orange City Council
- Power & Water Corporation
- Risk Edge
- RMIT University
- SA Health
- Seqwater

- SA Water
- South East Water
- Swinburne University of Technology
- Sydney Water
- Sydney Water Laboratory Services
- TasWater
- University of Adelaide
- University of Melbourne
- University of Newcastle
- University of New South Wales
- University of Queensland
- University of South Australia
- University of Tasmania
- University of Technology, Sydney
- University of the Sunshine Coast
- University of Western Australia
- University of Wollongong
- Veolia Water Australia
- Victoria University
- Viridis Consultants
- Wannon Water
- Water Corporation
- Water Futures
- WaterNSW
- Western Sydney University
- Yarra Valley Water

## Our Trusted Partners\*

- Australian Water Association
- Canadian Water Network
- Chinese Academy of Science
- Intelligent Water Networks (IWN)
- International Research Center On Water and Environment (CIRSEE)
- KWR Watercycle Research Institute
- Public Utilities Board Singapore
- STOWA Foundation for Applied Water Management Research
- TZW Water Technology Centre
- UK Water Industry Research
- Veolia Environnement Research and Innovation (VERI)
- WaterAid
- Water Environment & Reuse Foundation
- Water Industry Operators Association of Australia (WIOA)
- Water Research Commission South Africa
- Water Research Foundation
- Water Services Association of Australia (WSAA)

\* through membership of the Global Water Research Coalition.