

2022

Annual Report

The **Goyder Institute for Water Research** is a research alliance of the South Australian Government through the Department for Environment and Water, CSIRO, Flinders University, The University of Adelaide and the University of South Australia.

The Institute facilitates collaboration of governments, industries, and leading researchers to identify, develop and adopt sustainable, innovative and integrated solutions for complex water management challenges.





A message from our Chairperson

It has been another significant year for the Goyder Institute for Water Research.

This year, we successfully delivered the *Healthy Coorong, Healthy Basin* (HCHB) research program and the water resource rating, outback water and urban stormwater projects. We were also recognised nationally for outstanding research during our second term with the Australian Water Association's national R&D excellence award.

Pleasingly, the collaborative One Basin CRC bid, which we have played a leading role in, was successful and we're now working closely with the CRC to establish a R&D program to develop policy, technical and financial solutions to support and reduce exposure to climate, water and environmental threats in the Murray-Darling Basin.

Another new research project, *Adaptation of the South-Eastern drainage system*, recently got underway, continuing our longstanding involvement in supporting water management in the Limestone Coast region. The recent announcement of the Coorong, Lower Lakes and Murray Mouth Research Hub has capped off the year nicely.

The Hub will bring together First Nations, local communities, governments and scientists to develop critical knowledge and support the health of the Coorong, Lower Lakes and Murray Mouth region.



I'd like to thank everyone who has contributed to our success this year, particularly the Institute's Board, Research Advisory Committee and Director, Dr Kane Aldridge.

Kane will be taking up a new position with Watertrust Australia from January 2023 after leading the Institute for over 5 years. Under his stewardship, the Institute has:

- successfully transformed its operating model, whereby the Institute brokers new opportunities, along with delivering its important R&D
- negotiated the extension of the Institute from 2020 to 2023, with a recent agreement by our partners to extend it again through to 2026

- overseen the establishment and delivery of the HCHB research program, a major research initiative that has provided essential evidence to underpin management options to improve the condition of the southern Coorong
- established itself as an important partner of the One Basin CRC, with funding for 10 years
- gained agreement for the Coorong, Lower Lakes and Murray Mouth Research Hub
- secured around \$35 million in R&D funding to allow the Institute to continue to provide critical knowledge to support sustainable management of our water resources.

The Board and I thank Kane for his excellent leadership and wish him well in his new role.

As announced in October 2022, the Board unanimously endorsed Dr Alec Rolston as Interim Director. Alec previously acted in the role for three months in 2021 and has been Deputy Director since October 2022 and has also shown his abilities by successfully delivering the large and pioneering HCHB research program. I very much looking forward to work with Alec and the Goyder Institute team and partners in what will no doubt be another successful year in 2023.



Professor Barry T Hart (AM)
Independent Chairperson
Goyder Institute for
Water Research



A message from our Director

It's hard to believe that we're already approaching the last six months of our current term. I'm pleased to report that we are progressing extremely well towards our goals.



Dr Kane Aldridge
Director
Goyder Institute for
Water Research



This year has been very productive as we have:

- completed the HCHB research program, a demanding but highly integrated and collaborative program to inform the management of the Coorong
- helped establish the new Limestone Coast project that will support the Limestone Coast Landscape Board and National Water Grid Authority to explore climate adaptation options of the extensive drainage network in the region to support groundwater dependant ecosystems and agriculture
- helped establish the One Basin CRC, working closely with the University of Melbourne and partners to develop what will be the largest research partnership in the Murray-Darling basin (about 90 partners from government, industry and research organisations) to support climate adaptation of irrigation communities
- successfully negotiated the announcement of the Coorong, Lower Lakes and Murray Mouth Research Hub, which will build on the Institute's research-government partnerships to work with First Nations and regional communities

- received great recognition at the national and state levels with two awards from the Australian Water Association for R&D excellence.

I made the difficult decision to leave the Institute at the end of the year to take up a new opportunity with Watertrust Australia. It's been an absolute privilege and honour to lead such an important organisation – five years has gone fast! As I've talked to people across Australia, I've been continually reminded that the Institute is a very unique and well-regarded partnership that is helping to solve some of the biggest water challenges across Australia.

Water is so important to society but it's also a very challenging area to work in – I believe we can only find solutions by working together.

One of the things that I have enjoyed most during my time at the Institute is the opportunity to work with so many different people. There are of course too many people to thank here, but I will highlight a few. Firstly, I'd like to thank John Hill and Barry Hart for their generous and wise guidance as the two Chair's of the Institute during my time. I'd also like to thank our Board, RAC and executives of our partners for their belief in the value of the

Institute's collaborative model and for steering me and the Institute in the right direction. A big thanks to the many researchers and DEW staff involved in our research and its uptake for their commitment and dedication to generating and using the knowledge. And finally to our amazing team of Daniel Pierce, Alec Rolston, Daniel Flaherty and staff of ICE WaRM and The University of Adelaide in their roles as Institute Manager – it's been brilliant working so closely with you all – a huge thanks for all of your hard work behind the scenes to make all of the Institute's work possible.

I have loved my time at the Institute and its great to leave it in such a great position and in good hands. The Institute partners have recently agreed to extend the Institute to mid 2026, which will be formalised in the new year. I wish Alec all the very best in leading the Institute, utilising his extensive experience and expertise in R&D, government policy and stakeholder engagement.

I look forward to watching the Institute continue to grow and evolve as it continues to provide knowledge to help solve some of the big challenges for our most precious resource – water.



2022 highlights

Goyder Institute wins Australian Water Association's National R&D Excellence Award for its second term research program

The second term research program involved 187 scientists from 19 project teams and 20 research organisations to provide important cultural, economic, environmental and social benefits to Australia.

Goyder Institute wins Australian Water Association SA Branch R&D Excellence Award for the HCHB research program

This is the second year in a row the Goyder Institute has won this award.

Five integrated HCHB projects were successfully delivered to inform management of the iconic Coorong

The HCHB research program was an unprecedented investment into generating critical knowledge and capability to manage the Coorong.

One Basin Cooperative Research Centre kicks off

The Institute will play a leading role in the collaborative research program, set up to safeguard the environmental and commercial future of the Murray-Darling Basin.

New research project *Adaptation of the South-Eastern drainage system* under a changing climate begins

The fieldwork program began with an airborne electromagnetic survey along the coastline south of Mount Gambier.

Coorong, Lower Lakes and Murray Mouth Research Hub announced

The Hub will bring together First Nations, local communities, governments and scientists to develop critical knowledge and support the health of the Coorong, Lower Lakes and Murray Mouth region.

Goyder Institute for Water Research to extend to 2026

The Institute's partners have agreed to extend the Institute to 2026.



Our goals and impact areas

Priority Impact Areas

The Institute focuses on large opportunities to address complex problems of international, national and state significance to support the vibrancy of communities. This year we completed work across all of our priority impact areas.

2020-2023 goals

In its third term, the Goyder Institute has been working to:

- establish a large, diverse and impactful research portfolio
- successfully deliver established research projects
- continue to build capacity and capability in Institute partners and end-users
- be recognised nationally as a trusted source for undertaking independent and impactful research

- continue to build the collaborative model through the establishment of new project partners
- establish a viable long-term operating model that will lead to a fourth term of the Institute.

This report highlights our progress towards these goals.



Water for cities and people

We identified integrated management options to improve the environmental and social values of stormwater and urban waterways for the wellbeing of Adelaide communities.



Water for the environment

We informed the restoration of the Coorong to support its cultural, economic, environmental and social values for local, South Australian, Australian and international communities.



Water for agriculture

We're working to co-design solutions with the agricultural sector of the Murray-Darling Basin and Limestone Coast to support prosperous communities.



Water for mining

We analysed water resources in the South Australian Arid Lands region to support stakeholders identify shared challenges and potential collective actions.



Climate resilience

All of our established and proposed initiatives have focused on climate adaptation and supporting the climate resilience of communities.



Our research portfolio is large, diverse and has impact

The Institute's research portfolio has grown over the third term, with approximately \$15 million of projects complete or underway across all Impact Areas. A further \$19 million is to be established for *Water for the Environment*, *Agriculture and Cities and People* and *Climate Resilience* Impact Areas with >\$25 million being actively pursued across all priority Impact Areas.

The Institute's research has made a significant impact on South Australia, Australia, and the international landscape. In this term, we've:

- informed restoration actions in the Coorong, including providing knowledge that has helped identify infrastructure to improve waterbird habitat in the region and provided knowledge to support improvements in the condition of the South Lagoon
- facilitated sustainable water allocations for agriculture and wetlands in the Limestone Coast
- identified future risks and opportunities to water resources for all stakeholders in the Arid Lands
- informed the South Australian Government's urban water management approaches to support the health of urban waterways and the coast
- provided a roadmap to develop a water resource rating system for South Australia, in consultation with industry, community and government representatives
- invested further in climate change research
- highlighted, on a national and international stage, the collaborative research capability in South Australia.

Healthy Coorong, Healthy Basin Research Program

Our flagship HCHB research program has had a significant impact on the state and its future. The research has:

- informed restoration actions for the Coorong
- informed the establishment of funding for infrastructure projects to improve the ecological condition of the region
- led to further research to inform the management of the site
- built capacity within our research partners and the state government in climate adaptation and wetland management through the recruitment of early career post-doctoral researchers.

Communication of HCHB research has also provided a platform for greater engagement in, and awareness of, Goyder Institute-led research.



We've built capacity and capability in our partners and communities

Through our research and collaborations, the Goyder Institute has increased the skills and knowledge of our partners and helped them to grow.

We have:

- built partner capability across 24 areas of research (ANZ Standard Research Classification, 2020)
- increased partner capacity by supporting 41 full-time equivalent positions, corresponding to a total of 131 research staff and 14 students.

The HCHB projects involved 74 research staff, including 32 early to mid-career researchers and 8 students some of which are now working for the Department for Environment and Water.

We've also regularly supported Coorong site managers as our research has been incorporated into their decision-making tools.

We've also been supporting our end-user communities through our project advisory committees. A project advisory committee is formed for each new project, consisting of key end-user representatives.



We've delivered high quality research projects and shared our work

One of our main achievements this year has been the successful delivery of the ~\$8 million HCHB research program. The program was delivered to its agreed timeframes, budget and scope and will inform the management of the Coorong for years to come, including building important capability and capacity within our partners.

The Research Advisory Committee has continued to provide academic oversight throughout the year, reviewing all technical reports, conference papers and manuscripts.

13 high quality research projects completed

3 projects underway

15 peer-reviewed technical reports

48 internal reports and data produced

13 knowledge adoption outputs, including videos and fact-sheets

17 knowledge adoption activities/events, including Science and Community Forums



Collaboration is central to everything we do

The Goyder Institute for Water Research delivers research through the Institute’s partners and this year collaborated with an additional 10 external research organisations.

We developed three new funding partnerships and partnered with 16 end-user and stakeholder groups across government, community and industry:

Australian Government	Department of Climate Change, Energy, the Environment and Water, National Water Grid Authority, Murray Darling Basin Authority
South Australian Government	Department for Environment and Water, PIRSA, SA Water, Environmental Protection Authority, Stormwater Management Authority
Regional/local government	Limestone Coast Landscape Board, Green Adelaide, local governments including the Local Government Association and Alexandrina Council
Industry communities	URPS, BHP, Ngarrindjeri, First Nations of the South East, Coorong community groups, South East water allocation planning stakeholders (forestry, agriculture, environmental), Murray-Darling Basin industries and communities

Through the HCHB program, the Institute partners delivered 5 integrated projects in collaboration with 8 other leading research organisations to inform management actions of the South Australian and Australian Governments. We also partnered with community stakeholders, including First Nations, through citizen science and field support.

“Rivers die from the mouth up. Restoring the Murray Mouth, Lower Lakes and Coorong is a critical investment in the health of the whole system. An important part of the Goyder Institute’s work will be to develop relationships with First Nations, communities and industries to harness ideas to improve management of this ecologically important area.”

Minister for the Environment and Water,
the Hon Tanya Plibersek MP regarding the Coorong,
Lower Lakes and Murray Mouth Research Hub



Our work is recognised nationally

The Goyder Institute is a Tier 1 partner in the One Basin CRC, partnering with more than 90 organisations within the CRC from across the Murray-Darling Basin. This year we have also established new partnerships with the Limestone Coast Landscape Board, National Water Grid Authority and the Department of Climate Change, Energy, the Environment and Water.

We regularly have an impact on the national stage, provide briefings to the Australian and South Australian governments on the findings and implications of our research.

Our high-quality and impactful research was recognised with two awards this year.

Australian Water Association's SA Branch R&D Excellence Award

This award recognised the HCHB research program, providing independent research to inform future management decisions for the region. The research formed an important part of the \$77 million HCHB Program, an initiative of the Australian and South Australian governments that aimed to support the long-term health of the Coorong by providing evidence-based solutions to both immediate threats and future conditions under a changing climate. This is the second year in a row the Goyder Institute has won this award.

Australian Water Association's National R&D Excellence Award

The Institute won this award for our second term research program that provided Australia with important cultural, economic, environmental and social benefits. The program involved 187 scientists from 19 project teams and 20 research organisations working across all Impact Areas of the Institute to inform important management decisions of governments.



We're planning for a sustainable future

We're delighted that the Institute's Partners have agreed to extend the Institute from 1 July 2023 to 30 June 2026. This will allow us to keep providing sustainable, innovative and integrated water solutions that are critical to support our cultural, economic, environmental and social values into the future.

This agreement is consistent with positive feedback from stakeholders regarding our leadership in establishing and delivering large research programs and an achievement of our goal to establish a viable long-term operating model with our partners.



Financial Statement

Financial Summary For 2021-2022

Description	Opening Balance (\$,000s)	Income (\$,000s)	Expenditure (\$,000s)	Result (\$,000s)	Closing Balance (\$,000s)
Administration	\$353	\$581	\$569	\$12	\$366
Research	\$1,936	\$4,091	\$5,971	(\$1,880)	\$56
Knowledge Management	\$16	\$0	\$16	(\$16)	\$0
Total	\$2,305	\$4,672	\$6,556	(\$1,884)	\$422

91% of total budget to research and knowledge management to maximise impact

