WATERLINES

ISSUE 2, 2025

WATER TECHNOLOGY
WATER, COASTAL & ENVIRONMENTAL CONSULTANTS

reconciliation and collaboration

STEVE CLARK
Managing Director

Welcome to our latest issue of Waterlines

"I am proud that Water Technology have made a formal commitment to reconciliation with our First Reconciliation Action Plan."

The First Peoples of Australia have a deep and enduring relationship with the land and the water of our Country.

I am committed to supporting reconciliation with Aboriginal and Torres Strait Islander peoples and communities around Australia.

I am proud that Water Technology have made a formal commitment to reconciliation with our First Reconciliation Action Plan (RAP). Our Reflect RAP consolidates and focuses our efforts for our reconciliation journey and holds us accountable for making real and lasting improvements.

While we have been undertaking a number of initiatives in recent years to support reconciliation, we understand that many more opportunities exist for us to lay the foundations for deeper and more meaningful relationships and reconciliation outcomes in the future.

This edition of Waterlines provides an overview of our Reflect RAP and the work that we are doing with Aboriginal communities around Australia.

I thank our RAP Working Group for their commitment and energy to progress our Reflect RAP actions and those members of our team who are leading the way in connecting and collaborating with Aboriginal communities.

Our Reflect RAP can be found on the Water Technology website: www.watertech.com.au/reflect-rap-endorsed/.

Thank you for taking the time to read Waterlines and please do not hesitate to contact me, or any of the Water Technology team, if we can be of assistance.

Steve Clark

Reconciliation at Water Technology

Water Technology are proud to share that in December 2024, our Reflect Reconciliation Action Plan (RAP) was formally endorsed by Reconciliation Australia. This endorsement marks a significant milestone in our ongoing commitment to reconciliation, laying the groundwork for future initiatives and actions.

This Reflect RAP represents our commitment to strengthening and formalising our relationships with Aboriginal and Torres Strait Islander peoples, as the Traditional Custodians of the lands on which we all live and on which we conduct our work. The plan ensures that we prioritise time as a business to reflect on our role and vision for reconciliation within our organisation and across our sphere of influence.

Through the actions outlined in our Reflect RAP we will:

- Respectfully acknowledge Aboriginal and Torres Strait Islander peoples as Traditional Custodians.
- Understand and value Aboriginal and Torres Strait Islander peoples' histories, innovations, knowledge and culture.
- Strengthen our company's cultural knowledge and capabilities.
- Improve collaboration between our business and Aboriginal and Torres Strait Islander peoples.

We are committed to strengthening and promoting reconciliation within our company, as well as throughout the industry we work in. We aim for there to be a strong emphasis on this being an evolving process as we learn and progress and commit to new reconciliation-building activities within our business.

Water Technology thank Maurice Goolagong, a Wiradjuri man, who has has created a truly special piece of art for our business. The art work is a central part of our RAP and is also proudly displayed in each of our offices.

The symbolism in the artwork includes:

- Seven circles representing each of the States and Territories in Australia where we do our work
- Blue dots between each circle representing the waterways that connect us
- The animals that rely on healthy waterways for their home
- Black and white dots representing all the different communities that we visit in our work
- Hands that are for the people we help on our journey

Supporting the Community of Cabbage Tree Island

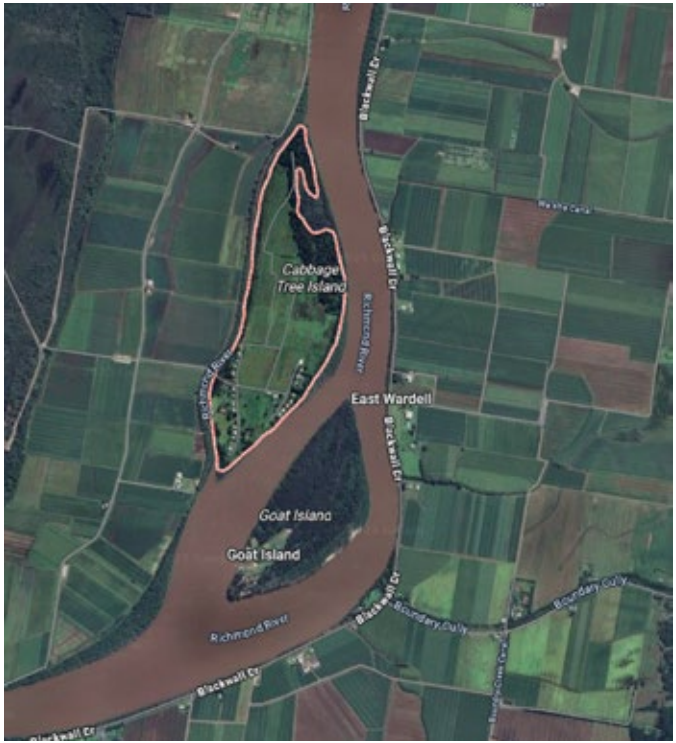
Cabbage Tree Island is located in the Richmond River, approximately 20km south of Ballina, in northern New South Wales. The island is part of the Bundjalung Nation and the community who call the island home have a deep connection to the land. Jali Local Aboriginal Land Council manages the island.

Cabbage Tree Island was severely impacted by a flood in 2022, forcing the entire community to evacuate and move into a purpose-built temporary emergency pod-village in nearby Wardell. The flood was the largest in recorded history in most of the Richmond River catchment. It was approximately a 1-in-500-year (0.2%) chance per year flood. Homes and other buildings across the island were extensively damaged.

A complex decision-making process then followed about whether to return or relocate the displaced Aboriginal community of 220 people.

Water Technology was engaged by Aboriginal Affairs NSW as an independent consultant to provide a transparent and holistic assessment of existing reports and other data to provide clarity for future options.

Our team contributed to a detailed place-based approach that incorporated cultural knowledge with western flood risk management and emergency management.

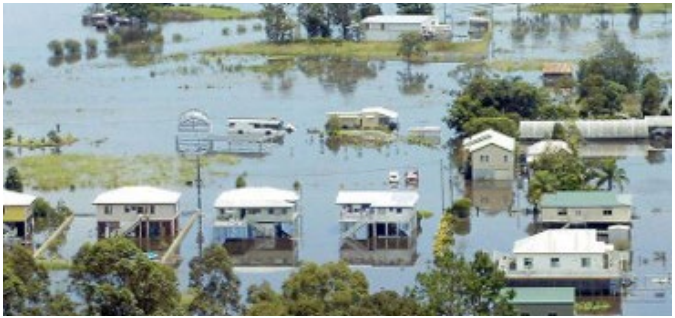


Our multi-disciplinary team delivered rapid assessments on the key aspects including flood risk assessment, flood evacuation planning, warning systems, climate risk evaluation, insurance, flood mitigation options and land use planning implications.

In October 2024, Jali Local Aboriginal Land Council decided to return the community to Cabbage Tree Island with the Water Technology report used as part of its decision-making process.

There are many news articles and videos on the internet about the flood damage and the progress towards the community returning to Cabbage Tree Island.

We also recommend watching this song created by the kids of the Cabbage Tree Island: https://www.youtube.com/watch?v=SOmCp0L5rhI



For further information contact: Neil Dufty, Principal Scientist, neil.dufty@watertech.com.au

Collaborating to Help Restore Munga Lake

Munga Lake is a culturally significant site located close to the town of St George, approximately 500km west of Brisbane. Munga means ear in Mandandanji. The lake name therefore means 'listening place' and is an important place of learning.

This project started with a vision from Mandandanji Traditional Owner Aunty Kay Blades for Mandandanji people to be able to enjoy Munga Lake once again, rehabilitating it from sick Country to healthy Country, with the aim to increase biodiversity, improve water quality and maintain or increase the frequency of flows to the lake.

Water Technology has been working collaboratively with Relative Creative, Firestick Alliance, Aunty Kay Blades and Queensland Aboriginal Rangers over the last three years to better understand how Indigenous Knowledge and First Nations land management practices could be incorporated into technical projects for landscape management, rehabilitation and resilience outcomes.

The overall key project objectives included:

- For Traditional Owners to see on the ground improvements to the environmental and cultural values of Munga Lake and remain involved throughout the project.
- To challenge business as usual approaches to water modelling through incorporation of Indigenous Knowledge.

- To demonstrate how First Nations Knowledge and technical consulting approaches to landscape restoration can be implemented, through a co-design process, for government and industry to consider.

The Project Team have walked on Country on multiple occasions to understand the Country, hear from the Traditional Owners and help to identify the causes of environmental degradation of Munga Lake. The objectives for the site were set, led by historical knowledge of Munga Lake, which has been passed down through storytelling.

Desktop assessments and modelling have been undertaken to help answer some of the Traditional Owner's concerns and guide the development of rehabilitation actions for the site to help achieve the objectives.

A 0.57 hectares works area on the margin of Munga Lake was selected to be the focus for trialling rehabilitation actions. The actions implemented have included cultural burning, weed control, ecological thinning and the installation of nest boxes. Water quality was measured as part of an Aboriginal Waterways Assessment in 2022. Remeasurement of water quality remains as a longer term objective.

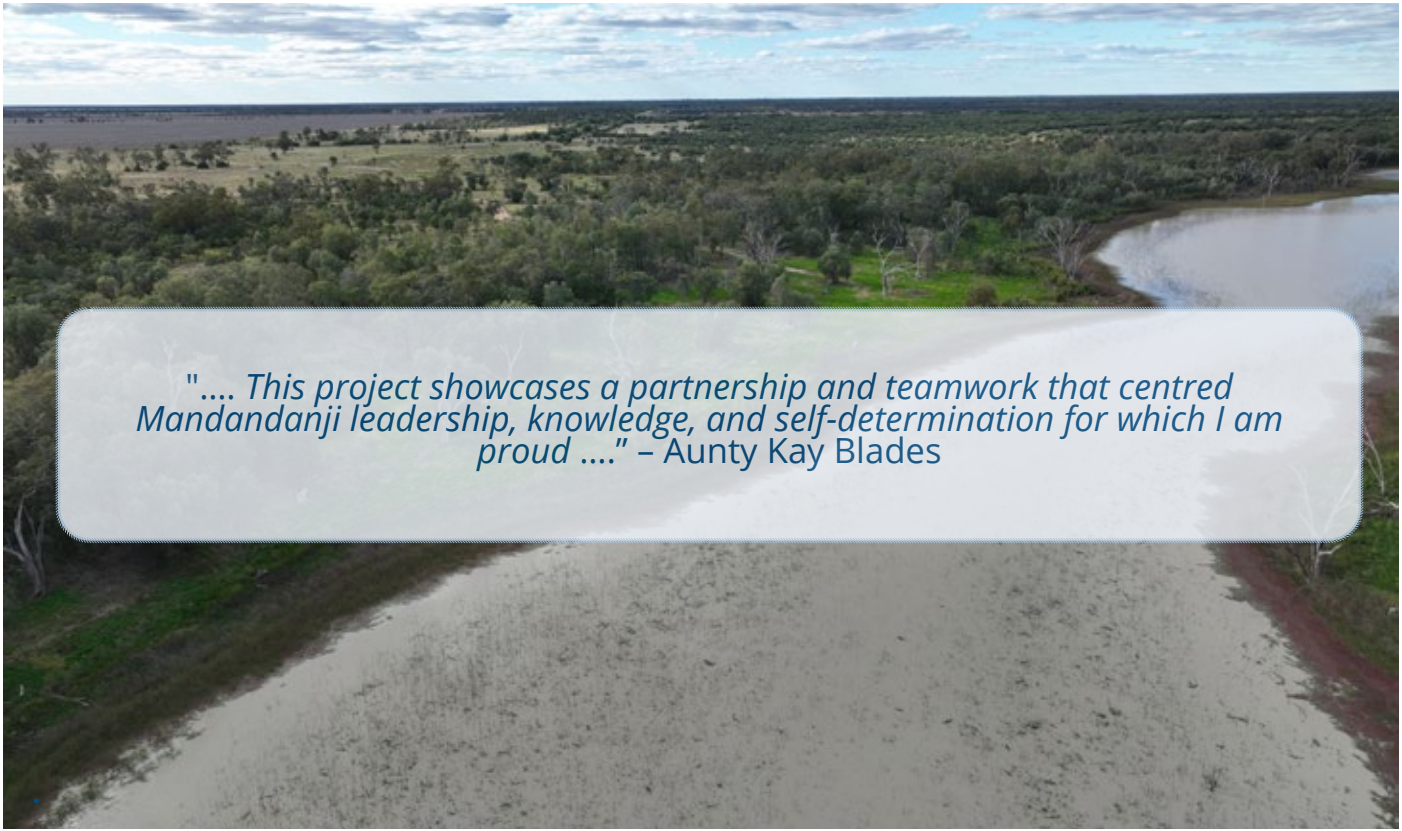
During the project it became clear that cultural or environmental flows were not readily available within this catchment's water plan. Aunty Kay Blades continues to lead conversations around environmental and cultural flows.

The Project Team were delighted to clearly observe on ground improvements during their June 2025 site visit following the implementation of the actions. Noticable improvements included an increase in bird activity, a dramatic reduction in weed cover, and an abundance of natural native vegetation recruitment including plants such as Warrigal Greens and River Red Gums. A great reward for a tremendous collaborative effort.

This is just the beginning for Munga Lake and next steps include:

- Continuing maintenance of rehabilitation work done to-date by the Queensland Aboriginal Rangers.
- Repeat photopoint photos every six months by Aunty Kay Blades.
- Seeking funding for ongoing rehabilitation.



This work has been funded by the Queensland Water Modelling Network's Research, Development and Innovation Strategy for the Department of Environment and Science.

For further information contact: Dr Daryl Lam, Principal Scientist, daryl.lam@watertech.com.au

Pike Floodplain Observation Bore Installation

The Pike Floodplain is located along the River Murray near Renmark, South Australia. The area provides habitat to a range of rare, vulnerable and endangered fauna and flora species; whilst also having very high cultural value and retains a high density of archaeological deposits.

The South Australian Department for Environment and Water delivers environmental water to the Pike Floodplain, when needed, to sustain or improve the condition of existing vegetation, establish new vegetation, and encourage diversity of fauna. This is undertaken using a series of regulators and blocking banks to raise water levels in the floodplain creeks, enabling water to spread across areas of the floodplain.

The effectiveness of the environmental watering program is monitored regularly by vegetation health assessments, water quality monitoring, soil monitoring and groundwater monitoring.

A review of the monitoring program indicated that the interaction of surface water delivery with groundwater was a process that required additional monitoring.

This led to the engagement of Water Technology's Groundwater Team to: (i) review the existing observation bores, (ii) design new observation bores that would be able to withstand environmental flows and natural flood events and (iii) supervise the drilling of the six new shallow observation bores.

Due to the environmental and cultural significance of the Pike Floodplain, a core component of the project was to develop and ensure compliance with an approach that would minimise disturbance to the ground surface and vegetation during the drilling program.

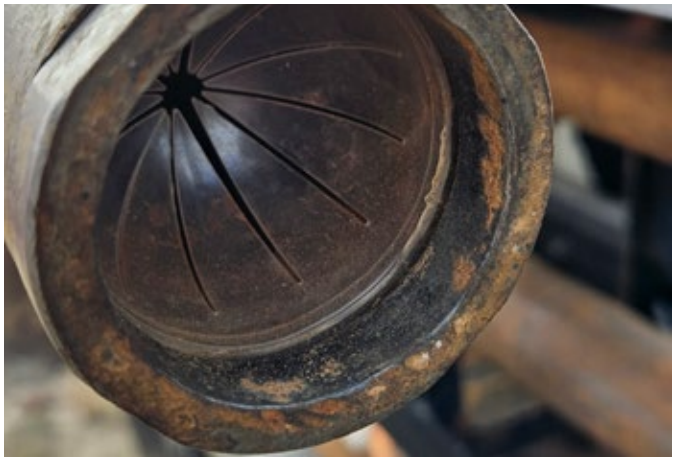
An innovative approach was developed in collaboration with AS Technical Drilling Services (ASTDS) to utilise a geotechnical drill rig that, thanks to its small size and rubber tracks, would enable minimal impact.

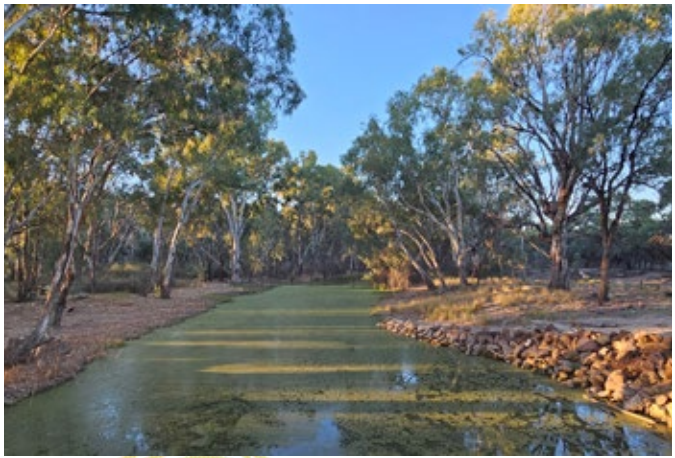
In addition, during the drilling process, special care was taken to ensure that there was no spillage of drilling fluid or development water on the ground.

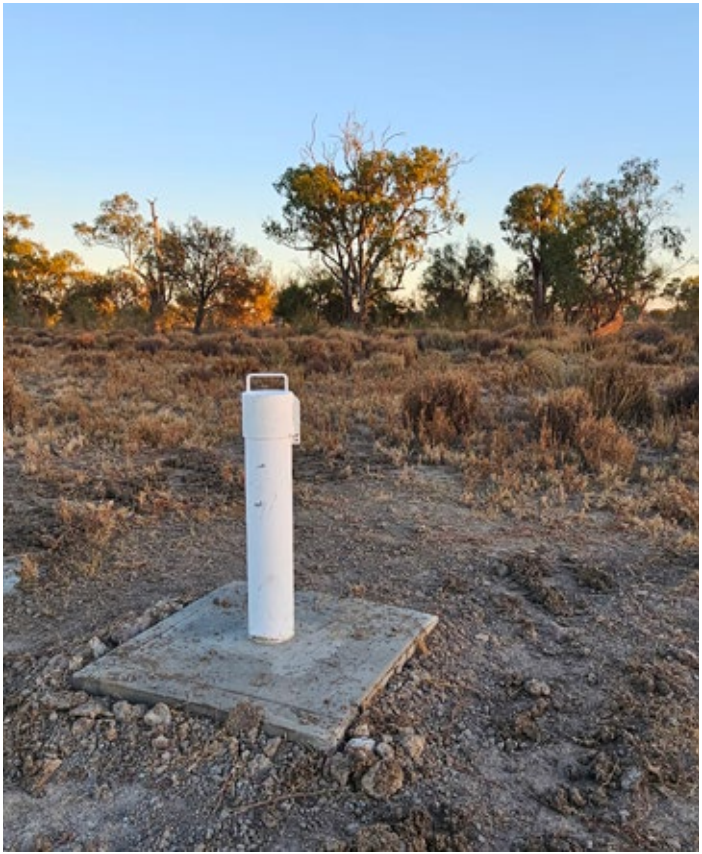
Cultural Monitors from the River Murray and Mallee Aboriginal Corporation (RMMAC) were on site during the drilling process and worked side by side with the Water Technology team and the ASTDS team to manage and protect cultural heritage across the floodplain.

Final site selection for drilling was performed in consultation with RMMAC representatives onsite, and soil cores collected during the drilling process were examined by both RMMAC representatives and the Water Technology hydrogeologist to ensure that no heritage materials were intersected during the drilling process.

A great collaborative project between all parties to protect the environmental and cultural values of the floodplain while delivering observation wells that will assist the monitoring and evaluation of the effectiveness of the management of the Pike Floodplain.







For further information contact: Dr Jordi Batlle-Aguilar, Principal Hydrogeologist, jordi.batlle@watertech.com.au

Wujal Wujal Master Plan Review

The Wujal Wujal township is located on Eastern Kuku Yalanji Country, on the western bank of the Bloomfield River within the wet tropics of Far North Queensland, between Cairns and Cooktown.

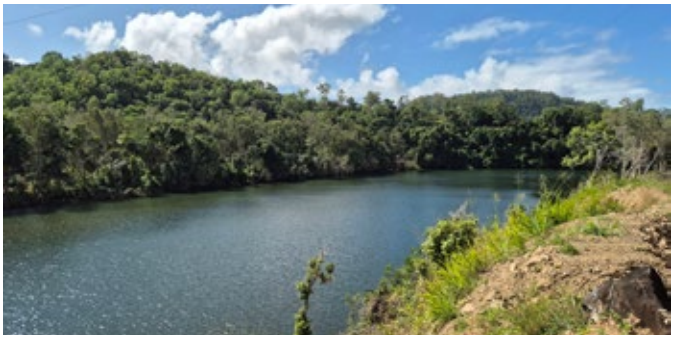
The Wujal Wujal area has experienced flood events in the past which have significantly impacted the community and its surrounds. The most recent flood event resulted from Tropical Cyclone Jasper in December 2023 which required emergency services to evacuate 300 residents. The flooding caused extensive damage to homes and critical community infrastructure.

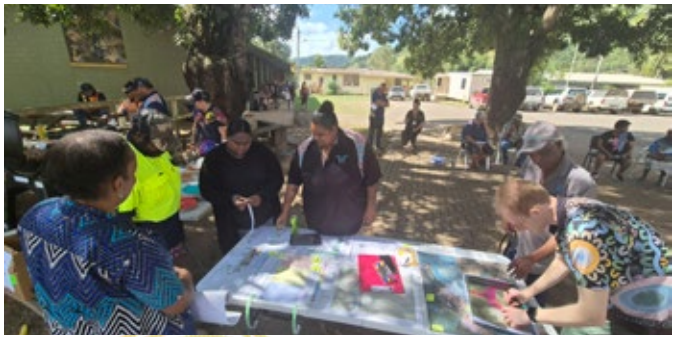
The town is limited with regards to available evacuation routes and is subject to early inundation of local roads. During the December 2023 flood event, some residents were able to evacuate via the road to Cooktown. Others had to wait over a week to be airlifted out. After 120 days, residents were able to return.

Following the devastation of Tropical Cyclone Jasper, Meridian Urban and Water Technology worked in close collaboration with the Wujal Wujal Aboriginal Shire Council and community members to reimagine a safer and more sustainable growth strategy for the township.

The project involved a review of the existing Wujal Wujal Master Plan to ensure that the plan remains contemporary to emergent issues and that it considers the significant flooding following Tropical Cyclone Jasper.

The first round of consultation with the community was undertaken in July 2024. Water Technology's flood expert, Andrew Thompson, joined the Project Team and members of Queensland State Government to set up a drop in session and yarning circle with the local community.





Confirmation was obtained from residents of the extent of inundation which confirmed both a riverine and overland flow flooding mechanism occurred during the 2023 event. Many residents also talked about the fast response time of the river and local catchments during the event.

A technical assessment was then undertaken including a flood risk assessment which utilised the best available data and knowledge from historical flooding events and considered the consequences of hazards on people, property and infrastructure. Hydraulic modelling of riverine and overland flow flooding provided information on flood hazard in Wujal Wujal.

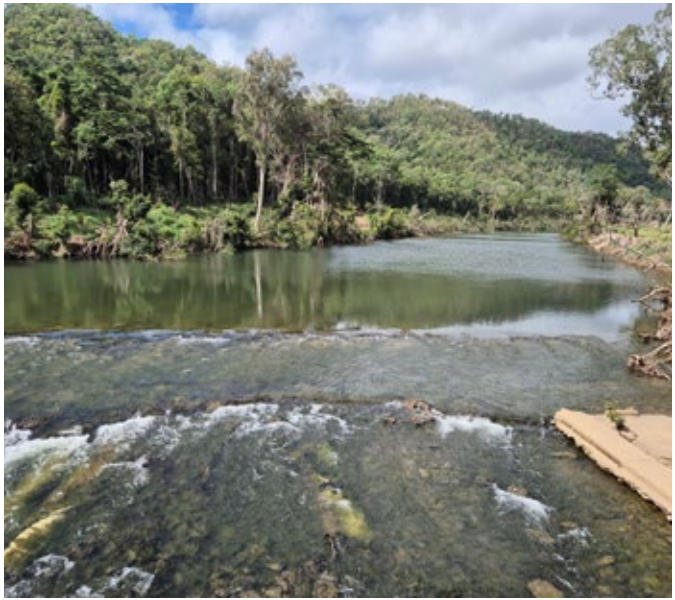
A long list of adaptation and mitigation options were developed combining the technical inputs, land suitability model and consultation findings.

Each option included high level details on cost, benefits, adverse impacts and effectiveness.

The projects and outcomes that were developed through the process are supported by a series of actions to be undertaken over the immediate, short and long term.

Combining local knowledge, land suitability analysis, and climate adaptation frameworks can lead to enduring recovery pathways for remote communities, like Wujal Wujal.

We extend sincere thanks to Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism, Wujal Wujal Aboriginal Shire Council, community members, and our project partner – Meridian Urban.



For further information contact: Richard Sharp, Principal Planner, richard.sharp@watertech.com.au

Hawkesbury-Nepean River System Coastal Management Program

The Hawkesbury-Nepean River System is one of the largest coastal river catchments, bounding Sydney to the north and west. It provides a stunning natural environment, a multitude of social and recreational benefits and is a key contributor to the regional economy. The Hawkesbury-Nepean River System has always been important Country for Aboriginal peoples.

However, the system has water quality and ecological integrity issues and is facing an increasing number of threats and risks - many of which will increase over the coming decades due to population growth within the catchment and the impacts of climate change.

Water Technology was engaged to support the development of *Stages 3 and 4 of the Hawkesbury–Nepean River System Coastal Management Program (CMP)* – a landmark initiative led by a steering committee comprising the 6 Councils that border the tidal waterways of the river system. The Coastal Management Program will establish a long-term, coordinated strategy for managing one of the most significant and complex estuarine systems in NSW.

Engagement with First Nations Group representatives is a vital component of the Coastal Management Program process, recognising the deep cultural connections and traditional knowledge that Aboriginal communities hold in relation to land and water management across the catchment.

These engagements create meaningful opportunities to listen to Country-based perspectives, cultural values, and site-specific knowledge. This input directly informs the development of management options and helps ensure that cultural heritage considerations are embedded throughout the Coastal Management Program.

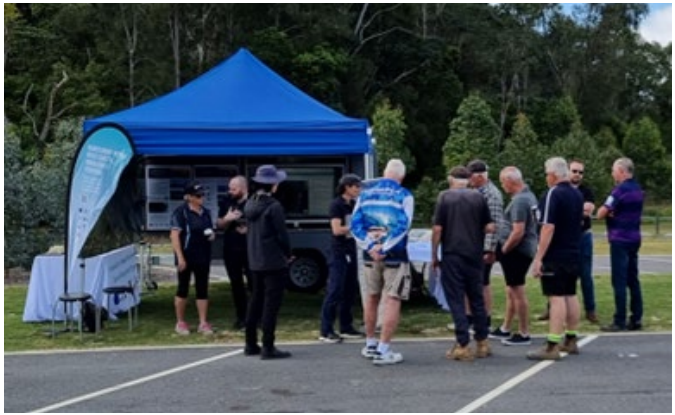
During Stage 3 of the Coastal Management Program process, regular engagement was undertaken with a wide range of Aboriginal organisations and advisory groups across the river system, including Local Aboriginal Land Councils and other First Nations Groups.

As a result of this ongoing engagement, 6 indigenous-based management actions will be included in the draft Coastal Management Program which will go on public exhibition later this year.

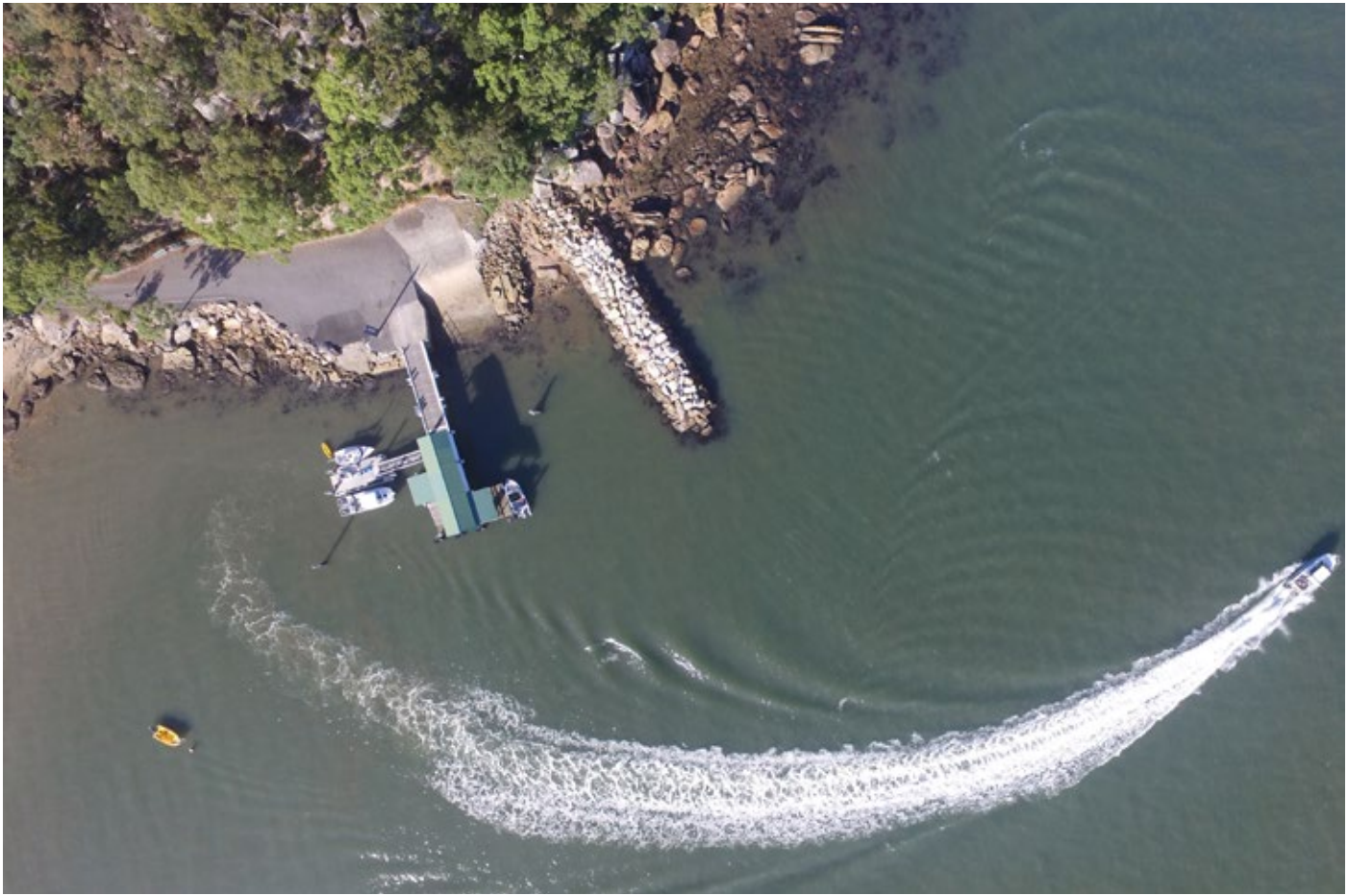
Further engagement with First Nations Groups will take place to ensure that all are comfortable with the management actions prior to Coastal Management Program certification and implementation.

The development of the Hawkesbury-Nepean River System Coastal Management Program is being supported by funding and technical assistance from the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW).

Further information and updates can be found on the project website: https://hawkesburynepeancmp.org



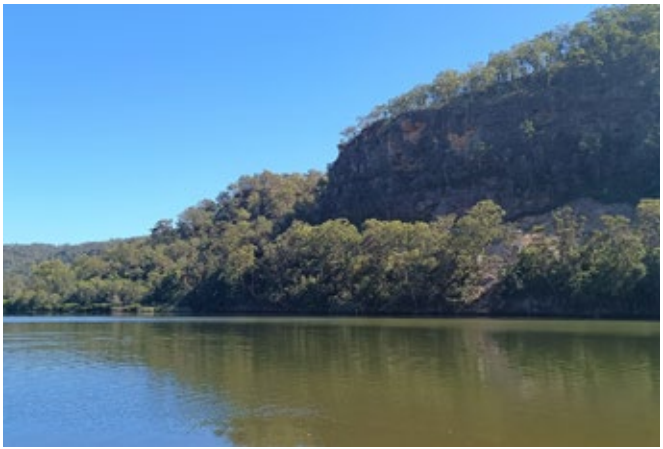
For further information contact: Chris Beadle, Principal Engineer, chris.beadle@watertech.com.au



Hawkesbury River Cultural Restoration Strategy

The Hawkesbury Region in NSW has a rich and continuing Aboriginal heritage, with cultural history extending more than 40,000 years. As the area and contributing catchment is relatively large, there are several local Aboriginal groups that have historically inhabited the region.

Aboriginal cultural heritage consists of places and items that are of significance to indigenous people because of their traditions, observances, lore, customs, beliefs and history. Aboriginal cultural heritage is dynamic and may comprise physical (tangible) and non-physical (intangible) elements. There are thousands of indigenous heritage sites located across the Hawkesbury Region.



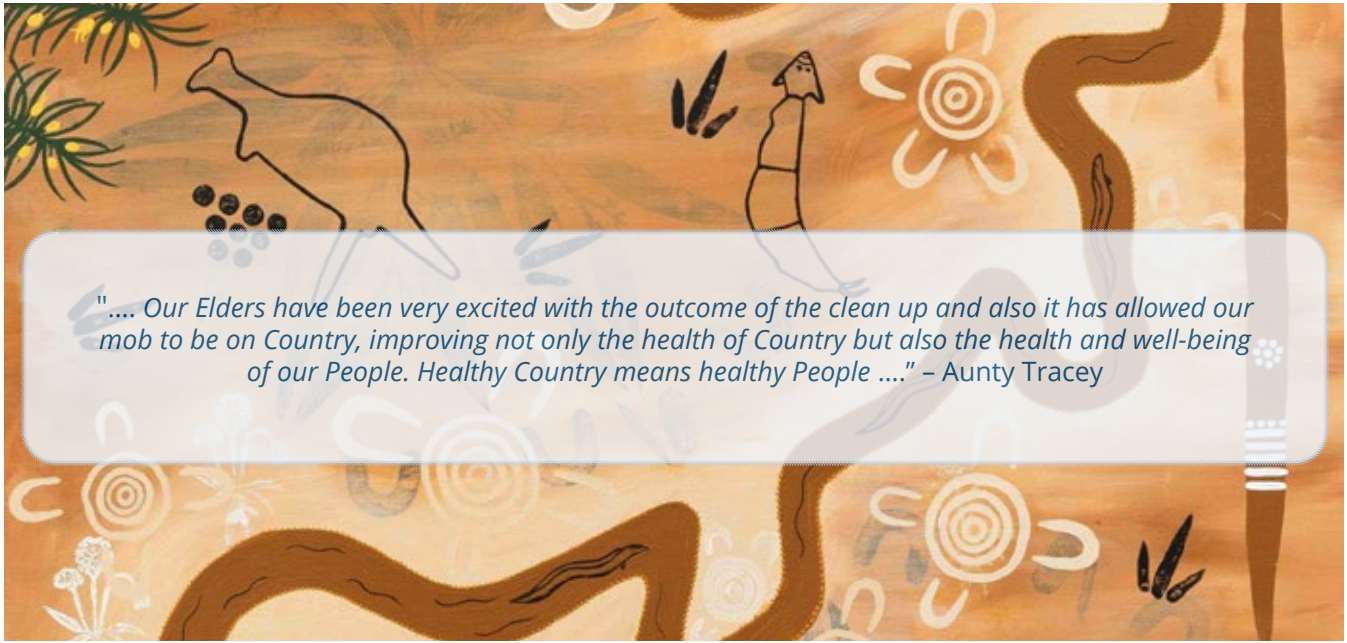
Water Technology was engaged by the NSW Government to help develop a Cultural Restoration Strategy for the Hawkesbury River estuary to:

- Guide the management of Aboriginal cultural landscapes in the area.
- Build resilience into the estuarine system and the capacity of Aboriginal peoples to manage cultural sites and Care for Country.
- Help improve cultural assets damaged in the severe flooding in 2021/2022.

The Cultural Restoration Strategy was developed in liaison with a sample of the First Nations Groups across the estuary.

The Cultural Restoration Strategy has enabled NSW Government funding to be provided for significant on-ground actions led by First Nations Groups including:

- Rehabilitation of foreshores at 4 locations.
- Cultural mapping to identify cultural sites.
- Clean up around known cultural sites.
- Clean up of river frontage at 4 locations.
- Due diligence assessment for works to protect cultural sites.



Artwork above: Marri Badu Maru - Big Water Path, by Leanne Mulgo Watson, 2022. Created by the artist for 11 Stories from the River Dyarubbin.

All projects included the employment of Aboriginal sea rangers and bush regeneration crews. The Cultural Restoration Strategy will also guide future funding for similar projects in the Hawkesbury River estuary and links to the Coastal Management Program.

Dr Eliza Middleton (Senior Ecologist at Water Technology) gave a presentation on this project as part of the ARC Training Centre in Data Analytics for Resources & Environments (DARE) seminar series. You can watch the full presentation on YouTube.

For further information contact: Dr Eliza Middleton, Senior Ecologist, eliza.middleton@watertech.com.au

Floodplain Management Australia Conference, *Melbourne*, 13th - 16th May 2025.

The FMA conference has been run for over 60 years and is for anyone interested in sharing ideas or learning about how we can make our communities flood safe. Many of our Water Technology team shared about a wide range of projects and commenced discussions with attendees about flood mapping, flood evacuation and climate change. In addition, we are proud that our project "the Lower Shoalhaven River and St Georges Basin Flood Evacuation Capability Assessment" was shortlisted for the FMA Excellence Awards in the Project of the Year Category.

Above: Rhiannon Garrett presenting at the FMA Conference

PIANC Australia & NZ Climate Workshop, *Brisbane*, 13th May 2025.

The Northern PIANC Chapter hosted a full day workshop on the impacts of climate change and extreme events on Ports, with a special focus on Queensland. Gildas Colleter, Water Technology's National Lead – Coasts & Marine and PIANC Climate Champion, presented on "Managing Climate Change Uncertainties" addressing how a responsive and informed approach to climate uncertainties can minimise risks and deliver appropriate and resilient navigation infrastructure. The event sparked some interesting discussions about different approaches for planning for climate change and how Ports prepare for and deal with storms and cyclones.

Above: Gildas Colleter (far right) at the PIANC Cimate Workshop

Public Works Conference, *Melbourne*, 14th - 16th May 2025.

Ben Tate, Water Technology's National Lead – Flooding, presented at the Victorian IPWEA Public Works Conference in Melbourne in the Integrated Water Management Session. With the latest Australian Rainfall & Runoff guidance on climate change showing far greater increases in rainfall intensity for shorter duration storms, Ben discussed how flood mapping studies using this guidance are resulting in the need to make difficult decisions with regards to future development in many of our established towns. Using examples from across Victoria, Ben presented the flood risk faced by several communities under current and future climate scenarios.

Above: Ben Tate presenting at the Public Works Conference

Shoreline Mangrove Offset Project Vietnamese Delegation Visit, *Brisbane*, June 2025.

Tony McAlister (Water Technology Director and Queensland State Manager) and Dr Maria Fernanda Adame (from Griffith University) showed a visiting group of Vietnamese water and environment specialists around the Shoreline Mangrove Offset Project (SMOP). A great opportunity to share the work being undertaken by Water Technology, on behalf of Stockland. Also for Dr Maria Fernanda Adame to describe the ARC Linkage research project being conducted in regard to the project by staff from Griffith University, Water Technology, Redland City Council, Stockland and the Department of the Environment, Tourism, Science and Innovation.

Above: Tony McAlister with the visiting group from Vietnam

Stormwater Victoria Conference, *Wangaratta*, 3rd - 5th June 2025.

There was a diverse range of presentations at the Stormwater Victoria Conference showcasing exciting projects and new insights. Dr Gayani Chandrasena, Water Technology Principal Engineer, presented on an update of the Healthy Waterways Strategy and also the Challenges of Designing Stormwater Harvesting Schemes in the Peri-Urban Environment, alongside Melbourne Water. The Water Technology team also led a technical tour of the Lower Ovens River (a waterway of Heritage Status) and its extensive system of anabranches and natural wetlands.

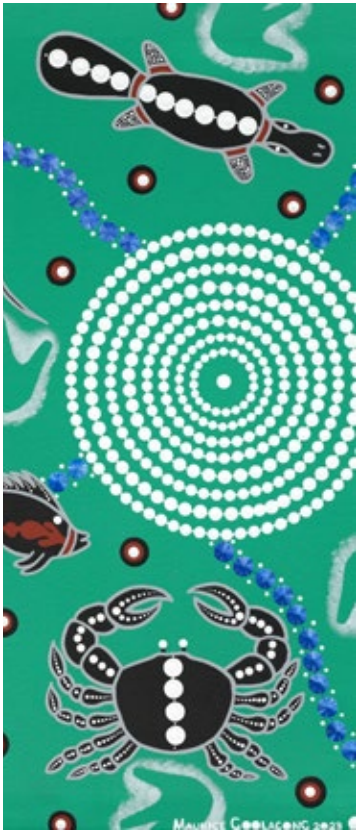
Above: Gayani Chandrasena at the Stormwater Victoria Conference

Giant Gippsland Earthworm Project Update Workshop, *Gippsland*, June 2025.

Water Technology are working in collaboration with the Gippsland Threatened Species Action Group, the Bass Coast Landcare Network, the South Gippsland Landcare Network, Invert-Eco and Drift Media as part of the 'Threat Mitigation and Soil Hydrology for the Giant Gippsland Earthworm' project, which is being funded by the Australian Government Saving Native Species Program. Water Technology's Principal Ecologist, Dr Michael Aberton, presented some preliminary results of the soil monitoring program which is increasing the knowledge of the soil hydrology requirements for Giant Gippsland Earthworm colonies to help their survival in the long-term.

Above: Michael Aberton out on site with representatives of the Giant Gippsland Earthworm Project

Diversity & Inclusion at Water Technology



Recently, as Water Technology and as individuals, we have participated in Reconciliation Week and NAIDOC Week events to help learn more about the challenges faced by First Nations peoples in Australia and also celebrate their culture, knowledge and deep connection to Country.

The National Reconciliation Week theme for 2025 - 'Bridging Now to Next' - served as a powerful reminder of the ongoing connection between our past, present and future. It calls upon us to reflect on the lessons of history and take proactive steps toward building a more inclusive, respectful and united future.

The NAIDOC Week theme for 2025 – 'The Next Generation: Strength, Vision & Legacy' - celebrated the achievements of the past and the bright future ahead. NAIDOC Week remains a movement grounded in community-led vision and integrity.

At Water Technology, we are committed to leading by example and fostering a culture of diversity, inclusion and reconciliation in every aspect of our work.

In line with our commitment to reconciliation, we have also established a new Diversity and Inclusion Committee, which is dedicated to driving awareness and progress within Water Technology. This committee plays a crucial role in fostering an inclusive workplace by promoting awareness, driving initiatives that support equality and ensuring diverse voices are heard and valued across the business. These efforts are part of our broader vision to cultivate a workplace where every individual feels valued, respected and empowered.

At Water Technology, integrity is one of our core values. It guides us in everything we do, ensuring that we act with authenticity, transparency and respect. Our commitment to integrity means that we not only recognise the importance of reconciliation but are steadfast in our efforts to make it a reality, both within Water Technology and in the communities we serve.

As we reflect on Reconciliation Week and NAIDOC Week, we are reminded that reconciliation is not just about acknowledging the past but about actively working toward a future where every person can succeed and contribute to a shared vision.

Staff Profile - Dr Eliza Middleton

"Eliza's career has been defined by saying "yes" to unexpected opportunities, to learning and to the unknown."

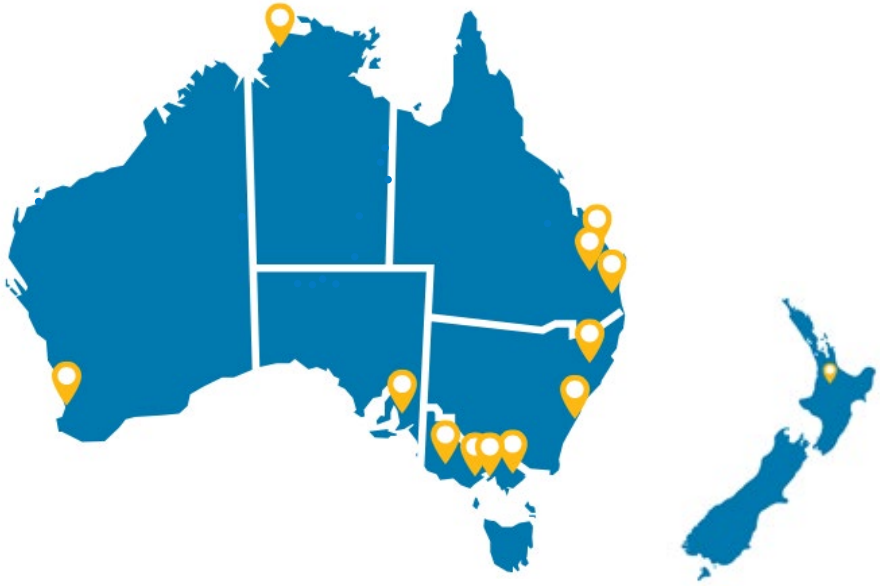
Dr Eliza Middleton recently commenced at Water Technology in a Senior Ecologist role in our Waterways and Ecology team. Eliza's career has been defined by saying "yes" to unexpected opportunities, to learning and to the unknown. Her journey has included researching ant behaviour in the Northern Territory's deserts, developing missile defence software inspired by honey bees for DARPA, becoming a familiar media voice on insects, and advocating for nature-related financial disclosures in the corporate world.

Eliza's sense of curiosity was rooted in an early connection to place. Raised on a remote farm in the Murray-Darling Basin, Eliza's formal education came from School of the Air. But her most profound lessons came from the land, and from Uncle Bruce, a Barkindji man who worked on the farm and chose to share his culture. He instilled in Eliza a deep connection to Country and a responsibility to protect it. Witnessing damage to both culture and environment, Eliza felt a strong responsibility to contribute to change.

A career highlight since joining Water Technology has been Eliza's involvement in a project which has brought her back to the Murray-Darling Basin, a homecoming in both geography and purpose. Synthesising four years of academic research across multiple disciplines, the project demanded both scientific rigour and emotional resilience. It reawakened memories of loss but also inspired hope. For Eliza, answering the Darling River's (Baaka's) call was not just professional, it was personal.

Her advice to others is simple: protect your balance. Passion for the work can make boundaries hard to see, and Eliza has learnt that space for life, love, and growth is just as essential as any job.

Outside of her professional life, Eliza spends time with family and stays active through bushwalking, bouldering, and karate. Creative outlets like painting and music, along with community outreach and school engagement, keeps her connected and grounded.



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