

## River Detectives Story of Change

**Rutherglen Primary School, North East CMA region, 2023**

River Detectives is a cross-curricular citizen-science program connecting teachers and young people with their local waterway. Through water-quality testing, macroinvertebrate sampling, and habitat surveys, students learn about the importance of catchment health and their role in caring for it.

The program is available to schools and youth groups in five regions across Victoria.

A relatively small school of 170 students, Rutherglen Primary in north-east Victoria is nestled within a strong farming community known as one of Australia's best wine regions. Brimming with arts and culture, this thriving family-friendly community is only a stone's throw from the beautiful Murray River.

A new River Detectives school in 2023, Rutherglen middle-years students were introduced to the program in term three. When teacher Tash Middlin first heard about the program, she saw it as a fantastic opportunity for her students to engage in meaningful and relevant learning opportunities about their local environment, while covering several concepts across the curriculum.

*"We hope that student's knowledge of the water, plants, and animals will lead to them developing a greater understanding of their local environment and our communities' responsibility in helping to take care of it."*



Getting ready for water testing at Lake King.

In a fantastic partnership extension, the school has contacted its local Landcare group to explore joint ventures that could benefit the health of the lake and the surrounds, such as weeding and planting. Tash reflects how this has brought the community further into the school learning journey;

*"It's sparked conversation about the history of the lake, rekindled past relationships with local groups who care for the lake, and helped us to remodel the science program."*

*"We test our local water body, Lake King, a five-minute walk from our school. Every second Thursday afternoon, our 3/4C class of 25 kids sets off with Education Support staff, and Principal Karryn Williams. The class has set groups to perform each of the tests in rotation so each student has an opportunity to experience and experiment all the equipment and processes. We recently received a water bug testing kit which we are excited to start using this month!"*



Students explore Lake King.



Tash also notes how her students have become more aware and appreciative of Lake King and the plants and animals that call it home;

*"They're more aware of events that can affect the water quality and have also been able to put their scientific knowledge and understanding into practice in a real-world setting."*



Habitat values at Lake King, Rutherglen.

*"They take notice of rubbish in the area and are more willing to clean it up; they are more aware of the fauna they see, from the birds on the lake to the ants moving around the dirt on the banks; they are more interested in thunderstorm events that frequent the area, and what happens when a deluge of water flows into the lake".*

Local families are being brought along for the journey too, with updates and findings being shared on the school Facebook page and excited students discussing their activities at home.

Students also complete theory projects to complement the practical component, which have included a deep-dive presentation on each of the water testing elements, and a research project into the fish, birds, and macroinvertebrates that call Lake King home.

*"The overall enthusiasm of the students has been the catalyst of all these changes - they constantly ask me, 'are we going to the lake today?' and if not, they are still eager to complete any of the theory as they see the relevance of it."*

Tash enjoys engaging with the kids outside in a real-life setting where science is being performed right before their eyes in a way students can understand and relate to.

*"The return for the love of science that this program has brought back into this school has been my highlight. It's sparked a push within our science teachers to promote and engage in more practical science programs for our students so they can learn the relevant curriculum topics in a more meaningful context. Oh, and of course another highlight was when NECMA came in to do a macroinvertebrate session with the kids – they still talk about it!"*



North East CMA River Detectives incursion.

*"My favourite activity was looking at the bugs. It was fascinating to see how certain things can make the water change and see what water bugs live in different areas."* - Ella

*"Testing water is my favourite thing. The activities are really fun and also the equipment. Yes!"* - Paige

*"I loved that we went down to the lake and tested the water and made sure that fish can live in our waterway. I love finding out how clean the waterway is."* - Alexi

## WHAT IS SALINITY?

Salinity refers to the movement and concentration of salt through the land scape and it is also called electrical conductivity

## HOW TO MEASURE SALINITY

Salty water conducts electricity and is measured using an e.c meter which measures electricity flow between two electrodes. many different units can be used to report salinity

Salinity Level	Salinity (dS/m)	Salinity Type	Use
Fresh	< 0.5	< 0.5	Drinking and all irrigation
Marginal	0.05 - 0.1	0.5 - 1	Most irrigation, adverse effects on ecosystems become apparent
Brackish	0.1 - 0.2	1 - 2	Irrigation certain crops only, useful for most stock
Saline	0.2 - 1.0	2 - 10	Useful for most livestock
Highly Saline	1.0 - 3.5	10 - 35	Very saline groundwater, limited use for certain livestock
Brine	> 3.5	> 35	Seawater, some mining and industrial uses exist

Source: Department of Water, Government of Western Australia

Excerpt of student slideshow about salinity.





Students on site doing a habitat survey of Lake King

*"I loved that every second week we got to go down and test how fresh and clean our waterway is and we got to test using the different materials to check the waterway and tell it back to the River Detectives. I also loved how we got to do projects and experiments with the water." – Poppy*

*"I really liked how we go to know more about river testing and how to use all the tools." – Will*

*"I liked how you had to keep the water clean while you tested. With the salinity test, you get all the cool gadget things and with phosphorous you get to spin the wheel and see what the colour is." - Stella*

After their introduction to the program in 2023, Tash says they will definitely continue with River Detectives;

*"This program will now be integrated into our science program for the middle and senior years and will be embedded from the very beginning of the year. I feel excited and privileged to be given the opportunity to involve more students into real-life science, and to be a part of an ongoing community project that aims to monitor and protect such an integral landmark within Rutherglen".*

Rutherglen Primary School also plans to collaborate more with their local Landcare group, with planting and weeding working bees already planned, as well as exploring other opportunities;

*"A goal is to apply for a Junior Landcare grant so we can continue to care for Lake King, and to connect with Indigo Shire and its Environment and Sustainability team to get the word out into the community about the importance of caring for our waterbodies!"*

Well done Rutherglen Primary School, we can't wait to hear all about your achievements in future years.



Students enjoying their regular visits to their adopted waterway.

## For more information about River Detectives:

Email [riverdetectives@nccma.vic.gov.au](mailto:riverdetectives@nccma.vic.gov.au) or visit [www.riverdetectives.net.au](http://www.riverdetectives.net.au)

Photos supplied by Tash Middlin