

river DETECTIVES



Statewide Annual Report 2022



COMMUNITY
PARTNERSHIP
PROGRAM



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Acknowledgement

The River Detectives program acknowledges Traditional Owners across the regions on which the program is delivered. We recognise their rich culture and spiritual connection to Country and the contribution and interest of Aboriginal people and organisations in land and natural resource management.

Program Delivery

River Detectives is an engaging education initiative that connects young people to nature by caring for their local waterway. Students learn about the importance of healthy waterways through water quality testing and the benefits to land, plants, animals and people. Participating schools are provided with equipment, support, training and teaching resources.

The statewide River Detectives program is generously sponsored by Agnico Eagle Australia Community Partnership Program. The sponsorship enables the co-ordination and delivery of the program across four regions.

2022 River Detectives delivery partners

- North Central Catchment Management Authority (CMA)
- Corangamite Catchment Management Authority (CMA)
- North East Catchment Management Authority (CMA)
- Wimmera Catchment Management Authority (CMA)
- Melbourne Water*

*Melbourne Water's participation in the program is secured through separate funding.

This report highlights statewide River Detectives program activities during the 2022 school year.

Statewide Delivery

95

Schools and groups participating in the program

39 North Central CMA
20 Corangamite CMA
27 Melbourne Water*
5 North East CMA
6 Wimmera CMA

125

Active waterway monitoring sites

45 North Central CMA
24 Corangamite CMA
37 Melbourne Water*
7 North East CMA
12 Wimmera CMA

3870+

River Detective students

1053 North Central CMA
521 Corangamite CMA
2050+ Melbourne Water*
196 North East CMA
50+ Wimmera CMA

Held two online statewide coordinator network meetings

Ran the 2022 Statewide River Detectives Online Summit

Presented at the ResourceSmart Schools Water Forum



Recorded an 'Ask the Expert' Wild About Waterbugs Webinar

Statewide statistics

Region	North Central CMA	Corangamite CMA	Melbourne Water*	North East CMA	Wimmera CMA
Registered groups	39	20	27	5	6
Active monitoring sites	45	24	37	7	12
Data entries	45	17	28	1	13
Water quality entries	35	16	17	1	10
Waterbug entries	8	1	9	0	3
Habitat assessments	2	0	2	0	0

Statewide highlights

Term one and two highlights were reported on in the mid-year report and included:

- Delivery of 16 professional development introductory workshops for teachers
- Coordination of five online statewide coordinator network meetings
- Recording of an 'Ask the Expert' Native Fish webinar
- Production of a Water Quality activity matrix

Term three and four highlights

Statewide River Detectives Online Summit

River Detectives teachers from around the state, project partners and regional River Detectives coordinators came together virtually on September 13 to celebrate and evaluate the program.

The summit gave regional coordinators the opportunity to share highlights from their region during the year and launch their wonderful Story of Change videos. The session also enabled educators to reflect on their River Detectives journey and provide important insights that will help improve future delivery of the River Detectives program.

Summit participants enjoyed a presentation by special guests Jackie Myers and Monica Tewman of RMIT's Litter Trackers Program.

The Litter trackers program connects scientists with schools and community groups to launch GPS-tracked bottles into waterways to demonstrate how and where litter travels. The project aims to reduce littering, educate communities about the environmental effects of litter on our waterways and to empower people to make informed choices about preventable litter pollution.

This presentation was recorded and is now available on the [River Detectives website](#) to inspire schools to consider making use of this very valuable program and adding another form of citizen science research to their studies as River Detectives.



'Wild About Waterbugs' Ask The Expert Webinar

We were thrilled to engage freshwater ecologist and waterbug guru John Gooderham from the National Waterbug Blitz for an enlightening chat about macroinvertebrates. Students from around the state were given the opportunity to submit questions for John and these were posed during the recorded session.



Q "What is your favourite stream to look for waterbugs in?"

Langley PS Grade Two student,

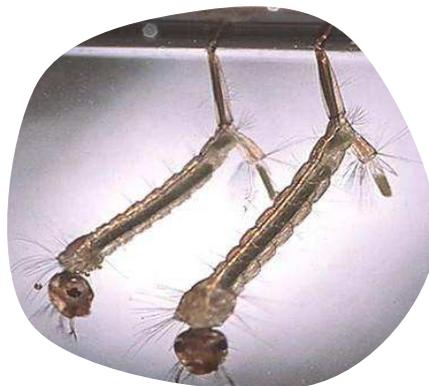
A "My favourite is a stream or wetland I haven't been to before. My job is like exploring where every new ecosystem is an exciting chance to see something different."

John Gooderham



John has a wonderful way of inspiring enthusiasm and wonder.

He shared incredible photos of waterbugs, rarely seen footage of waterbugs in action and fascinating facts. The recording is available on the [River Detectives website](#) for on-demand viewing.



North Central CMA

Coordinator Nicole Howie



Participation in River Detectives in North Central during 2022

Number of River Detectives schools registered	39
Number of students participating in the River Detectives program	1053
Number of teachers/educators being supported	60

Activity during 2022

	Number	Participants
Coordination of teacher professional development sessions	8	24
Coordination of and attendance at state-wide network meetings for regional coordinators	7	N/A
Delivery of one incursion per school per year	20	730
Incursion/excursion with a non-River Detectives school	1	5
Production of one Story of Change	1 written 1 video	N/A

Term one and two highlights*

- Coordination of six introductory PD sessions for teachers
- Implementation of four Project Prattle chats with teachers linked to North Central CMA projects
- Delivery of eight school incursions including the 'Going With The Flow' River Detectives on Country event
- Attendance at the Beacon Careers Expo and the Regional Catchment Strategy launch

*More detail about these highlights can be found in the 2022 Statewide mid-year report

Term three and four highlights

River Detectives art exhibition

The Gateway to Gannawarra Information Centre in Cohuna played host to a gorgeous display of artwork during July.

Stunning ceramic turtles and fish produced by River Detectives students from Koondrook, Leitchville, Gunbower and St Joseph's Kerang primary schools were proudly on show for a month-long exhibition.

The artwork was produced under the guidance of ceramicist Ann Ferguson during the River Detectives 'Going with the Flow' school event at Treetops Scout Camp on Gunbower Creek, Cohuna on June 8.



Students learnt about how water for environment assists species of fish and turtles in the Gunbower Forest and interacted with real fish and turtles thanks to Native Fish Australia and Turtles Australia. They then learnt clay techniques and produced a ceramic piece to reflect on their learning.

The display was accompanied by photos and quotes from the day. Artwork was returned to students as a lasting memento of their day of environmental and cultural learning.



The art exhibition viewed by all who passed through the Cohuna Visitor Centre during July

Weeroona College at Wanyarram Dum

Weeroona College Bendigo Year 7 students enjoyed two days of citizen science activities at the Wanyarram Dum frog ponds along Bendigo Creek on August 16 and 17. The program was designed to complement water studies in the term 3 Humanities curriculum and classification concepts in the term three Science curriculum.

All 165 students spent either a morning or afternoon at the site enjoying a rotation of water quality testing and macroinvertebrate sampling activities.



Waterbug activities were provided by Parks Victoria staff and water quality testing by North Central CMA staff.

They learnt about the often-misunderstood waterway beside their school, the aspirations of the Reimagining Bendigo Creek project and the cultural significance of the Wanyarram Dum frog pond site. Weeroona College is one of six River Detectives schools along the Bendigo Creek corridor linked with the Bendigo Creek Citizen Science project in partnership with the City of Greater Bendigo.

"This was a perfect program to link with classroom work, generate discussion back at school with hands on activities in an area super relevant to the students."

Weeroona College Year Seven teacher

Story of Change

The positive story of the River Detectives program anchoring Bridgewater Primary School's innovative Outdoor Learning Program was documented in [writing](#) and digitally with an engaging short video.

Nicole Howie, North Central CMA River Detectives Project Officer, has worked closely with the school over the past two years and saw them as a perfect candidate for the 2022 story of change in the north central CMA region.

The story is accessible at [Bridgewater Primary School River Detectives - YouTube](#)



135

Views

School Incursions

Getting out and about in schools and spending time with River Detectives students and teachers is one of the most effective ways program coordinators can provide support. Eleven schools took up the opportunity for a one-hour incursion during terms three or four with Nicole.

Five schools requested a macroinvertebrate sampling session to learn more about the hidden underwater world of these incredible and highly valuable little creatures. These sessions not only increase student skills in bug observation, identification and classification but provide a unique opportunity for staff to witness a session in action and increase their confidence and likelihood of implementing further sessions independently. And of course, they are LOTS of fun!!

Highlights were finding dragonfly larvae, mayfly nymphs, caddisfly larvae (stick caddis) and the amazing log cabin caddis.



Waterbug incursions at Camp Hill, Langley and Woodend primary schools.



After the devastating flood event across our region during October, Nicole was keen to find a way to support River Detective schools in the North Central region who had been impacted. Many participating schools had students whose properties had been inundated and, in a few cases, schools themselves had been flooded. We were keen to offer a gentle learning experience to process the way our beloved waterways had impacted communities during this time.

Bridgewater Primary School snapped up the opportunity to help their nine students understand how and why climatic events had led to such extreme weather, to share their personal stories of homes and properties being flooded and to appreciate the benefits of smaller flooding events for waterways and catchments.

Nicole worked with students to [dramatise the La Nina effect and the negative Indian Ocean Dipole phenomena](#), they listed positive and negative results of flooding, watched a video of a wetland springing to life and read the powerful picture story book 'Flood' by Jackie French.



Another incursion about flooding was held with the Daylesford Dharma School later the same day. Although the students' homes had not been directly impacted, their catchment had. Coliban Water's Lucas Arnup joined the students to speak about the flows experienced in the Coliban catchment and how the Upper Coliban, Lauriston and Malmsbury Reservoirs responded under their management.

“Seeing a session running when we are just getting restarted on our River Detectives journey was invaluable. It was also lots of fun!”

Langley Primary School teacher

Term 3 and 4 incursions

School	Date	Year level	Students	
1. Gunbower Primary School	2/8/2022	2-6	20	
2. Leitchville Primary School	2/8/2022	3-6	7	
3. St Joseph's PS Kerang	2/8/2022	2-4	35	
4. Bridgewater Primary School	3/8/2022	P-6	6	
5. Golden Square PS	8/8/2022	3-4	15	
6. Langley Primary School	9/8/2022	P-6	5	
7. Weeroona College Bendigo	16-17/8/2022	7	165	
8. Kalianna School *	12/9/22	VCAL	4	
9. Woodend Primary School	15/11/2022	4	75	
10. St Francis of the Fields PS	5/12/2022	3	80	
11. Bridgewater Primary School	6/12/2022	P-6	9	
12. Daylesford Dharma School	6/12/2022	4-6	9	
13. Camp Hill Primary School	14/12/2022	Prep, 3-4	70	
			Total	500

*non RD school



Splashing around in water trays at Camp Hill PS was the perfect summer activity to celebrate the end of the year.

Challenges

COVID-19 continued to have an impact on staff availability and the continuity of school programs during terms three and four. Some schools found it difficult to implement the River Detectives program when focus needed to be placed on core curriculum areas.

An extremely wet winter and spring culminated in a widespread and highly destructive flooding event during October, with delayed impacts on northern parts of the North Central catchment as the water migrated to communities there and in many places stayed in low lying areas for many weeks.

River Detectives school Rochester Primary School was significantly impacted due to record-breaking floods. Over-floor flooding to the school caused programs to cease onsite and resume at makeshift locations weeks later.

River Detectives group Merry Gatherings Kitchen Garden came close to inundation in Newbridge leaving the garden sodden and unusable and saw River Detectives work put on hold.

River Detectives school Bridgewater Primary School remained high and dry, but many students' homes and properties were inundated. School programs were interrupted while focus shifted to flood recovery and student wellbeing, and learning resumed in a modified way as students returned.

River Detectives school St Joseph's College Echuca spent many weeks in remote learning as floodwaters slowly rose to their peak. Interestingly, teacher Peter Phillips provided voluntary learning tasks about floods to encourage students to share their experience and investigate the pros and cons of flooding.

Other schools such as Gunbower and Koondrook primary schools, and schools in Kerang, spent weeks on standby watching and waiting to see how the floods would impact their towns. There wasn't a River Detectives school in the North Central region that didn't have students with stories to tell of the way floods impacted them.

Plans for 2023

Next year River Detectives plans to support a similar number of schools with priority given to schools who:

- Align with one of the North Central CMA's projects, including:
 - Reimagining Bendigo Creek Citizen Science Project
 - A Healthy Coliban Catchment
 - RiverScan
- Submit citizen science data a minimum of four times per year
- Identify a catchment/waterway issue that students will investigate during the year

Communications and media in Terms three and four

Fish and Turtles Galore

Kirstin Nicholson

Turtles and fish galore are on display at the Gateway to Gannawarra Visitor Centre in Cohuna. The ceramic sculptures were created by students from Koondrook Primary School, Gunbower Primary School, Leitchville Primary School and St Joseph's Primary School in Kerang who attended North Central Catchment Management Authority's River Detectives 'Going with the Flow' event in June.

More than 90 students attended the event at Treetops Scout Camp in the Gunbower Forest where they learnt about water bugs, turtles, fish, environmental water flows, boomerangs and cultural weaving. Representatives from Parks Victoria, Turtles Australia, Native Fish Australia and local traditional owners took part in the education day.

The turtles and fish, which were made under the guidance of ceramicist, Ann Ferguson, are on display until the end of July.



Gateway to learning

Nathan Spicer
nspicer@theguardian.com.au

THE Gateway to Gannawarra visitor centre was recently adorned thanks to the region's primary school students. As part of the river detectives program set up by North Central Catchment Management Authority (NCCMA), students from Koondrook Primary, Leitchville Primary, Gunbower Primary and St Joseph's Kerang went to the Top Scout Camp in Cohuna to learn about their local waterways.

"They had a whole day of activities learning about water bugs, local Indigenous culture, environmental watering and how that impacts on fish and turtles and were given advice on what they could do to help their local species in their own daily life," NCCMA river detective project officer Nicole Howie said. "A ceramicist also came to work with the children to teach them little clay techniques. Half of the children made a turtle and the other half a fish

and they decorated them. The ceramicist took them away to glaze, and we thought before we give them back to the students it was an ideal opportunity to put on an exhibition. The clay turtle and fish are now on show at the Gateway to Gannawarra visitor centre for a limited time. "The display showcases the event with some photos and quotes from the students and then there's the broader opportunity to distribute messages about the environmental water events happening in the Gunbower forest at the moment," Ms Howie said.

As part of the program, every school involved signs up to be a river detective and they adopt their local waterway. "They do monthly water quality testing, learn about waterway health, how to look after their waterways and to get really involved in citizen science," Ms



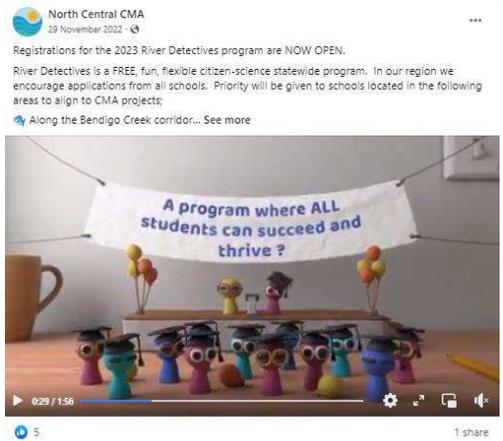
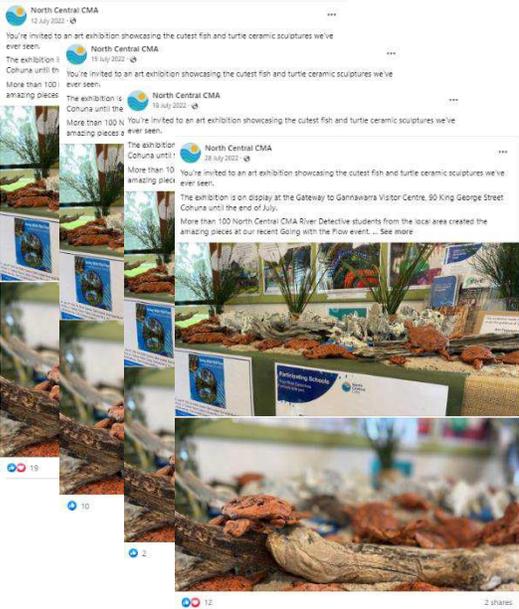
The turtle and fish display at the Gateway to Gannawarra visitor centre.

2

Articles in local print media

21 July 2022 Koondrook and Barham Bridge

9 Aug 2022 Gannawarra Times





15
Social Media Posts

191 Likes
19 shares

River Detectives featured in
Coliban Water's Term 3
education newsletter
31/8/22

River Detectives

Are you one of the 98 schools across Victoria participating in the free, flexible and fun River Detectives program? Nicole Howie, River Detectives Project Officer at North Central Catchment Management Authority, shares their latest news:

- Schools have been busy monitoring water quality of their 'adopted' waterway each month and learning about river health.
- We have offered PD sessions, free incursions and produced an *Ask the Expert* webinar about native fish with fish ecologist Dr Peter Rose.
- In June, four River Detectives schools in the Cohuna area had an activity day at the Gunbower Creek, including: weaving and boomerang painting, macroinvertebrate sampling, learning about environmental water and sculpting clay fish and turtles.
- Macroinvertebrate sampling teacher PD in Term 4 2022 (open to all staff, not just River Detectives schools). Learn more about the fascinating world of water bugs and share it with your class. Session dates will be posted [here](#) shortly.
- Visit [Resource River Bank](#) tab of the website for ideas, inspiration and practical resources for teaching and learning about waterway and catchment health.
- Registrations for the 2023 program open in November. Check out this [claymation](#) and consider joining us for our free, flexible and fun citizen-science program.



North Central Chat

JULY 2022

Congratulations Epsom PS
Epsom Primary School was recently recognised at the 2022 ResourceSmart Schools Awards.

Our River Detectives schools often embed the program within wider environmental education curriculum and many of them are achieving climate action strategies and many of them are achieving climate action strategies on a wide variety of sustainability fronts.

Primary School is a great example of the way involvement in the River Detectives program and ResourceSmart Schools program can complement each other.

2. the great achievements of ResourceSmart were recognised at an awards ceremony at the

North Central Chat

AUGUST 2022

Students learnt about how environmental watering assists species of fish and turtles in the Gumbov Forest, saw real fish and turtles in the Gumbov Australia and Turtles Australia displays then learnt clay techniques to reflect on their learning and produce a ceramic piece.

The display was accompanied by photos and quotes from the day. Students are looking forward to having their artwork returned as a lasting memory of their day of environmental and cultural learning.

A two-day event will be held with Weeroona College students at the Wirryarram Dum frog ponds on the Bendigo Creek in Wattle Hills allowing the entire Year 7 cohort to participate over August 16 and 17. Students will be involved in hands-on water quality testing and macroinvertebrate sampling.

Planning is underway for a statewide Online River Detectives summit later this term. Teachers from our 97 schools to participate across the state will come together to celebrate achievements, share learnings, participate in the program.

Victorian National Water Week Poster Competition 2022
Entries are now open.
 Water authorities across the state are facilitating this

North Central Chat

OCTOBER 2022

Castlemaine Urban Waterways 4 Oct
 A Healthy Coliban Catchment 13 Oct
 Reminging Bendigo Creek 27 Oct
 Tullaroop Catchment Restoration Project 17 Nov
 RiverScan (Native Fish Recovery Plan) 23-25 Nov

Each session can allow for a few extra helpers. Contact Britt if you would like to join in.

britt.gregory@vic.gov.au
 Ph: 5440 1943 | M: 0401 213 962

River Health Snapshot Reports

Did you know that 70 per cent of North Central Waterwatch sites are within priority project areas for the North Central CMA. The valuable data collected by our monitors helps us to compile River Health Snapshot reports for each project. We are proud to release the latest snapshot reports analysing data collected by our citizen scientists over 2021 for the following projects:

- A Healthy Coliban Catchment
- Casta
- Bendigo
- Tullaroop
- RiverScan

We'll done Britt for their love and power of citizen science improvements in water.

Aquarium launch

A few of our staff attend the launch of Bendigo Library on 1

The aquarium celebrates some little known pygmy perch, Murray gulgongs and Australian be added over time.

The impressive tank is a fantastic showcase learn more about our

The aquarium was de funding from the Cent and the support of the and the City of Greater The aquarium was de by Design. The Austr

Association, Native Fish Australia and Middle Creek Fish Hatchery supplied the native fish.
 A must-see for everyone next time you're in Bendigo!

Action Team of the Year (primary)

In Magpies comprises 36 members that meet to prioritise their Sustainability Action Plan tasks. mole learning, they entered the ResourceSmart if the Future Challenge Competition, audited ste, participated in the Grow a Row initiative to stoes for the community, and even won a buddy Bench from Coles and Replas.

Curriculum Leadership School of the Year

note learning, every year level had their own with sustainability activities, such as recycle for art using newspaper.

ery proud our very own north central River is school, Epsom PS, was celebrated as a two categories:

North Central Chat

NOVEMBER 2022

Communities Caring for Catchments

Spring Macroinvertebrate Monitoring

Spring is a busy time of year for Waterwatch, and this year is no exception. Our team, together with our project partners and Waterwatch community are immersed in identifying the critters that live in our waterways. By learn a lot about how healthy these water bodies are

Waterbugs an important part of the food chain and are a good indicator of the health of the ecosystem by their presence, absence, abundance and their tolerance levels (to pollution and other unfavourable conditions).

We still have a few places available for volunteers and monitoring activities in November. Please contact Britt britt.gregory@vic.gov.au, if you'd like to join us.

Tullaroop Catchment Restoration Project 17 Nov

2023 River Detectives Registrations

We are excited to announce that registrations for the 2023 River Detectives program will open on Monday November 28 for schools and youth groups in the North Central CMA region.

As in previous years, priority will be given to schools that are within CMA priority project areas. These are:

- Bendigo Creek Citizen Science Project
- Tullaroop Catchment Restoration Project
- RiverScan Native Fish Recovery (Gunbower and lower Loddon area)
- Caring for the Campaspe
- A Healthy Coliban Catchment
- Ramsar Kerang and Gunbower
- Castlemaine Urban Waterways

If you are a current River Detectives school, you will receive a registration pack over the coming weeks. New schools are encouraged to apply by heading to the River Detectives website after November 28 and clicking on the 'apply now' link.

To find out more about the program and how it could work in a school near you visit www.riverdetectives.net.au

North Central Chat

DECEMBER 2022

The video is available to anyone and will be enjoyed by children and adults alike. You can watch it [here](#).

It has been a pleasure to support our 39 River Detectives schools this year. Although COVID-19 has still had an impact on the capacity of schools, we returned to a semi-normal year of activities and I have loved getting out and about to spend time with teachers and students.

We know that across our region there are now 50 teachers and 1053 students of all ages who are little bit more aware of our waterways/catchments and how to care for them. Congratulations to all

Waterwatch North Central
Communities Caring for Catchments

Welcome to the final Chat for 2022 - can you believe the end of the year is already here!

Waterwatch Victoria has started planning for a very special upcoming event next year, which we are lucky enough to be co-hosting our region:

30 years of Waterwatch

Please save the date - Friday 24 March - and keep an eye on your inbox for further details and a special invitation to all of our dedicated Waterwatch monitors. More details to come early in the new year.

I would like to wish all our amazing Waterwatch monitors a very merry Christmas and happy new year. I wish you all much joy and happiness together with your loved ones during this special time of year.

Best regards for a safe and happy festive season.

Britt Gregory
 Project Officer - Waterwatch and Citizen Science
 North Central CMA
 Email: britt.gregory@vic.gov.au

North Central Chat

Water Storage Update

Region	Water Storage	% full at 29 Sept	% full at 26 Oct
Dartmouth Dam	100.88	↑101.25	
Hume Dam	96.00	↓93.00	
Reedy/Middle Lk	97.30	↑114.85	
Kangaroo Lake	91.39	↑99.60	
Kow Swamp	85.24	↑105.76	
Wonga	80.09	↑82.22	
	90.90	↑91.33	

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 Citizen Science Coordinator
 North Central CMA
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river
 AGNICO EAGLE
 COMMUNITY PARTNERSHIP PROGRAM

Water Storage Update

Region Water Storage % full at 29 Sept % full at 26 Oct

Dartmouth Dam 100.88 ↑101.25

Hume Dam 96.00 ↓93.00

Reedy/Middle Lk 97.30 ↑114.85

Kangaroo Lake 91.39 ↑99.60

Kow Swamp 85.24 ↑105.76

Wonga 80.09 ↑82.22

90.90 ↑91.33

We've coming and helping out the waterbugs of 16 urban waterways on October 4.

5

North Central CMA Chat articles featuring the River Detectives Program

July 2022

August 2022

October 2022

November 2022

December 2022

river

AGNICO EAGLE
 COMMUNITY PARTNERSHIP PROGRAM

One door closes and another opens

As 2022 draws to a close, we look forward to 2023.

Just in time for the spring/summer season of waterbugging, we have released a second 'Ask The Expert' webinar for the year. 'Wild About Waterbugs' was recorded with waterbug guru John Gooderham recently and is available for viewing now.

John shares the most incredible photos, videos and facts about the quirky ways waterbugs survive and thrive. It is a great opportunity to see rarely seen footage of the underwater world and learn how waterbugs may have reacted to recent flood events.

To our River Detectives schools that have been, and continue to be, impacted by floods, we extend our sincere thoughts and best wishes. It has been a very difficult time.

I will be visiting some of these schools before the end of term to discuss floods, the climatic conditions that produced them, how and why our catchments reacted the way they did, and the pros and cons of flooding events. I hope this helps students in some small way to process their experience.

Looking to 2023, registrations have opened for next year's River Detectives program and will remain open until 14 February.

If you are a teacher, a student, a parent, a Landcarer, or someone who is a community member and wish your town's

Corangamite CMA

Coordinators Deirdre Murphy and Kristen Lees



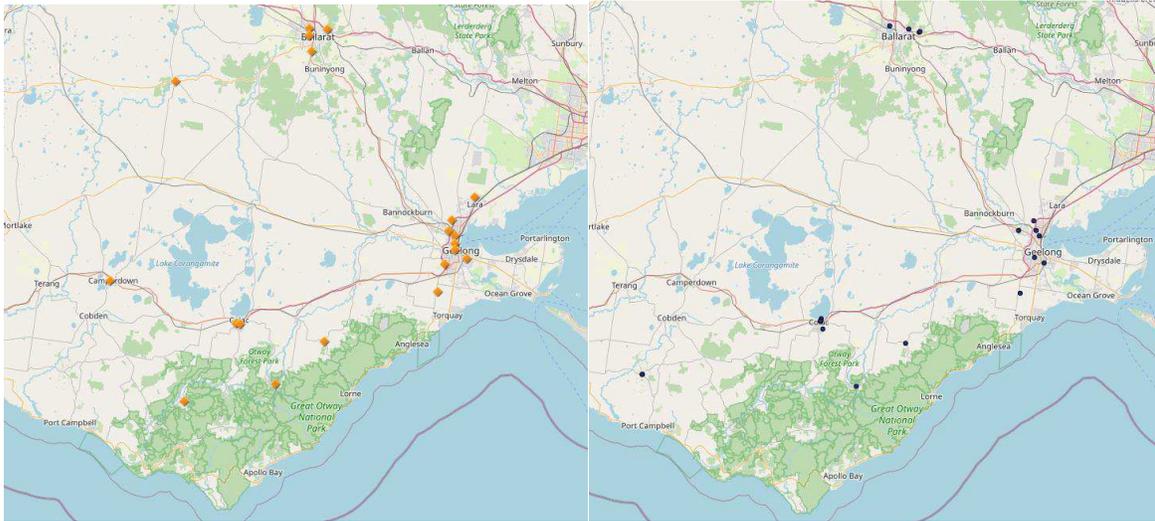
Participation in River Detectives in Corangamite during 2022

Number of River Detectives schools registered	20*
Number of students participating in the River Detectives program	927
Number of teachers/educators being supported	24

Activity during 2022

	Number	Participants
Coordination of teacher professional development sessions	5	19
Coordinator attendance at state-wide network meetings	5	N/A
Delivery of one incursion per school per year	11+*	661
Incursion with a non-River Detectives school	5	333
National Water Week event	1	44
Production of one Story of Change	1 written 1 video	N/A

* Serendip Sanctuary is counted as one school (they've delivered various River Detectives activities to 7 schools and 1 disability group)



LEFT: Spread of River Detective schools across the Corangamite catchment.
 RIGHT: Spread of River Detectives events across the Corangamite catchment.

Term one and two highlights*

- Coordination of three introductory PD sessions for teachers
- Delivery of four school incursions

*More detail about these highlights can be found in the 2022 Statewide mid-year report

Term three and four highlights

National Water Week activities in partnership with Central Highlands Water and Wadawurrung Traditional Owners Aboriginal Corporation.

It was an extraordinarily perfect day. Just a few days before, most of Kirks Reservoir Park at Gong Gong had been flood-affected (and it was again more than once in the weeks following) but on October 20 there was a break in the weather. The sun shone, the water had drained away, and much to everyone’s surprise, the National Water Week event was not cancelled at the last minute.

Forty-four St James Parish School, Sebastapol grade three and four students and their accompanying teachers joined presenters to celebrate the Australian Water Association’s National Water Week. Corangamite CMA River Detectives partnered with Central Highlands Water (CHW) and Wadawurrung Traditional Owners Corporation (WTOAC) to deliver a series of interactive workshops, through which the students rotated, with a break for a picnic lunch, and a big story circle at the end to share what they had learned.

The theme of National Water Week 2022 was *Our Water Stories*, inviting the community to explore their own stories and imagination, looking to the past, present and future.

Wadawurrung Traditional Owners Aboriginal Corporation delivered *Wadawurrung Water*, introducing students to Wadawurrung people's relationship to, and the cultural values of the river.



Central Highlands Water delivered *Water Wise*, encouraging students to consider why and how students use water, why it matters, and how they can use it wisely.

Corangamite CMA River Detectives coordinator Kristen Lees delivered *Story of the Yarrowee*, tracing the journey of the river from its start above Kirks Reservoir, right down to where it joins the Leigh, then the Barwon River and beyond.



Corangamite CMA River Detectives coordinator Deirdre Murphy delivered *Wonderful Waterbugs*, introducing students to the life stories contained within the water of the river, through the macroinvertebrates that live there.

Building new relationships: linking with RMIT University AQUEST and the Bellarine Catchment Network

RMIT AQUEST's Litter Trackers project has a natural synergy with River Detectives. It aims to:

- Raise community awareness of waterway values and connections between catchment activities and waterway health
- Introduce an educational program about litter transport through catchments to the Bay and open ocean into schools
- Empower the community with knowledge to make informed choices about preventable litter pollution.

As a River Detectives school, North Geelong Secondary College has claimed a section of Cowies Creek, which runs into Corio Bay. So it made sense to add Litter Trackers to their existing program of monitoring water quality.

On August 4, River Detectives facilitated a day of activities with North Geelong SC students including:

- AQUEST scientists working with students to release litter items fitted with GPS devices into Cowies Creek. Tracking these items through the stormwater surges that have occurred since this activity has demonstrated to students how far and how quickly their local creek can ferry litter.
- A waterbug survey from Cowies Creek samples, led by Corangamite CMA
- Bellarine Catchment Network leading students in a litter collection activity, highlighting the persistence of small pieces of litter in the environment.

Students finished the day with a much greater awareness of litter and its sources, its impact on the creek (including on the creatures that live in it), and its transport through the catchment to the sea; as well as improving their understanding of what lives in the creek, and how their presence or absence gives clues to the creek's health.



CCMA's Zoe Hogan demonstrating waterbug collection, students identifying bugs and GPS tagged litter tracker bottles launched at Cowies Creek.

Maintaining long-term partnerships: Covenant College, Geelong, Batesford Ryansford Stonehaven Landcare Group and the City of Greater Geelong

As River Detectives, Covenant College Year Nine students have deepened their engagement with their river – the Moorabool – in the past two years. Focusing on the river at Dog Rocks, the students have increased their awareness of the condition of the Moorabool River and the importance of healthy waterways to the environment; and learned about threats to the river system, threatened species and habitat.

Since 2020, River Detectives has been integrated into a broader environmental program delivered by the college in partnership with BFS Landcare for the past 10 years and supported by Golden Plains Shire and the City of Greater Geelong. The program includes weekly walks, talks and on-ground work in the river's nature reserves; and now regular water quality testing of the river.



Story of Change

Deans Marsh Primary School's River Detectives journey was featured in the Corangamite CMA region's [written](#) and digital 2022 Story of Change.

The small school of 40 students has been completing citizen science activities at Deans Creek for the past three years.

These activities are complemented by River Detectives incursions, excursions to local wetlands and parent/Landcare involvement to develop the school wetlands and create a nature walk on the school grounds.



76

Views

The video story is accessible at [Deans Marsh Primary School River Detectives - YouTube](#)

School Incursions

Corangamite CMA region River Detectives coordinators Deirdre Murphy and Kristen Lees have been busy in the latter half of 2022 visiting registered River Detective schools delivering incursions about waterbugs, water quality testing and *Story Of A River*.

Several special incursions were held to extend the reach of the program. On August 4, River Detectives was one of 14 industry workshops showcasing the way that maths and science are used in their work (in partnership with the Neil Porter Legacy Foundation).

To encourage Timboon P-12 to join the River Detectives program they coordinated the engagement of:

- A Corangamite CMA riparian project officer and Curdies Valley Landcare Group members to present to Year Seven Geography students about the water cycle, how their local catchment works, impacts on water quality and water quality testing.
- A Corangamite CMA communications officer to present a waterbug session to secondary students about the importance of water quality in Power Creek and what role communication skills play in supporting environmental work.
- A Corangamite CMA Riparian project officer in partnership with Curdies Valley Landcare Group, supported by two Year Seven Geography students, to deliver a presentation on the water cycle, how the catchment works and water quality testing to four groups of Year Five and Year Six students from Timboon P-12 School and Nullawarre Primary School.



Term three and four incursions

School	Date	Year level	Students
1. Serendip Sanctuary (PV)	various	various	394
2. Little Bendigo PS	20/7/2022	F-2	29
3. North Geelong SC	4/8/2022	12 VCAL	15
4. Timboon P-12, Cobden Tech, Terang College *	4/8/2022	7-8	28
5. Geelong Baptist College	12/8/2022	3-6	20
6. Forrest Primary School	16/8/2022	P-6	22
7. Deans Marsh PS	17/8/2022	3-4, 1-2	24
8. Freshwater Creek Steiner School	9/9/2022	5-6	17
9. Timboon P-12 School *			
10. Timboon P-12 School *	28/10/2022	7	25
11. Timboon P-12 School and Nullawarre PS *	8/11/2022	7-10	100
	8/11/2022	5-6	100
*non RD school			
		Total	774



Studying waterbug features at Little Bendigo Primary School.

Challenges

The greatest challenges encountered this year were the perennial problem of time-poor teachers, making access and availability difficult to arrange incursions in a timely manner, compounded by:

- COVID-19 and other factors creating staffing issues within schools
- Staff changes in a small number of schools
- Weather either making outdoor activities impossible or creating flooded or dangerous testing sites.

Despite that, activities took place and engaged teachers did not have their enthusiasm dampened, merely their plans, at times. Schools have been active. Some are dedicated, others are sporadic in their testing regime. Those that do test are not necessarily entering the data onto the River Detectives site. This has been an ongoing challenge. The data entry component of the teacher PD is right at the end of the session and maybe not enough focus is placed on it. A possible solution might be to have a separate PD on the River Detectives website - data entry and Billabong Banter.

Other challenges have been:

- Encouraging schools to embed activities as a regular part of the curriculum
- Catering for one-off engagement opportunities for non-River Detective schools ie. how are engagements branded as River Detectives if they are not registered as River Detectives schools?
- Avoiding the River Detectives branding being swamped by Waterwatch.

Plans for 2023

All Citizen Science coordinators are time poor. The extra resources available through River Detectives assists Corangamite River Detectives coordinators to deal with the administrative burden of schools, event coordination etc. If there was a higher demand for incursions next year, the time available by the two RD facilitators (who already have a full Citizen Science load) may be stretched beyond the realms of possibility.

The partnership with Litter Trackers will continue, adding value to the River Detectives program in registered schools. It also provides an opportunity to introduce non-RD schools to the program and the resources available to supplement their Litter Trackers involvement.

Acknowledging the success of the school/Landcare partnership model demonstrated by Covenant College, the region will be prompting other Landcare groups to establish partnerships with schools through River Detectives.

Communications and media in Terms three and four

Trash tracking program seeks to reduce ocean waste

September 4, 2022 • BY Times News Group



CCMA Chair Catherine Jenkins (left), Minister for Water Harriet Shing (centre), Labor candidate for Bellarine Alison Marchant (centre right) with RMIT scientists and students from Northern Bay college and Geelong High. Photos: SUPPLIED

GPS tracked bottles are being launched into the region's waterways as part of a program to demonstrate to school and community groups the path litter takes from suburban streets to our beaches and the ocean.

RMIT university scientists have teamed up with the Corangamite Catchment Management Authority and Bellarine Catchment Network on the Litter Trackers: Burbs to the Bay project, which is designed to help reduce litter on the coast by raising awareness about how it gets there.

Geelong schools involved in the initiative include Geelong High School and Northern Bay College, St Joseph's Flexible Learning Centre, St Terese Catholic Primary School and North Geelong Secondary College.

Water Minister Harriet Shing joined members of RMIT's Aquatic Environmental Stress Research Group in Geelong last week to see GPS-enabled litter trackers dropped into the Barwon River, to simulate litter thrown in the catchments.



Students learn to identify the contents of their local waterways.

"Litter dropped on our streets is washed into stormwater systems where it eventually ends up in on our beaches, but this project will gather important information to help tackle the problem and protect our waterways," she said.

Students from Northern Bay college and Geelong High were also there to learn about how 95 per cent of the litter that ends up on beaches is transported there through stormwater drains after being dropped in suburban areas.

"To build a more sustainable and liveable future for Geelong, we need healthy waterways- and that means we need to tackle our litter problem at the source," Geelong MP Christine Couzens said.

1

Article in local print media

4 September 2022 Golden Plains Times



1
Social Media Post

Litter Trackers

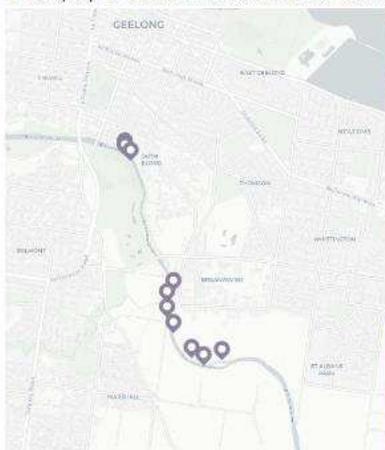
Litter Trackers has come to Geelong, Bellarine and Surf Coast.

Did you know that 95% of the litter ending up on our beaches is carried through our stormwater systems from town to the sea?

Local schools teamed up with RMIT AQUEST researchers, Bellarine Catchment Network and Corangamite CMA citizen science program to raise awareness of litter pollution in our waterways. At the main launch, Minister for Water MP Harriet Shing, with Geelong High School and Northern Bay College students, launched bottles equipped with GPS tracking devices into the Barwon River. The tracking devices tell the story of whether litter becomes entrapped or if it travels via our waterways to the sea.

Other launches occurred in the region: North Geelong Secondary College at Cowies Creek, St Joseph's Flexible Learning Centre at Barwon River and St Therese Catholic Primary School at Spring Creek. And all these bottles are on the move!

To keep up to date on where the Litter Trackers are, visit www.rmit.edu.au/littertrackers.



Water quality testing and site induction has been happening at sites across the catchment – at Barwon Heads with EstuaryWatch and at Balyang Sanctuary with River Detectives teachers



River Detectives – A freshwater education program

River Detectives is an exciting education initiative of Catchment Management Authorities that inspires teachers and students to understand, appreciate and care for their local waterway through engaging, cross-curricular, citizen-science activities.

We have reached the end of River Detectives for 2022 and thank the teachers and 927 students from 20 schools' students for all their work this year. You have done some amazing work with water quality testing, waterbug surveys, Litter Tracker releases and numerous other school incursions.

Each year, the CMAs that deliver River Detectives in their regions are asked to provide one story of change from one of their participating schools. This year, the Corangamite catchment region school selected for this honour was Deans Marsh Primary School. You can read the Deans Marsh story, and the stories from the other regions, here: [River Detectives](#). There is also a short video on Deans Marsh PS: <https://www.youtube.com/watch?v=MIxE-CMQ8-8&t=7s>

Registration period is open for new and returning schools for the 2023 program. Click the 'Apply Now' link on the [River Detectives](#) homepage to be part of it.



And a special outing for primary school students from St James Parish School celebrated "National Water Week: Our Water Stories" at Kirks Reservoir Park. Photo courtesy Central Highlands Water.



3

Corangamite CMA citizen science e-newsletter articles featuring the River Detectives Program

September 2022

October 2022

November / December 2022

Melbourne Water

Coordinator Jane Petch



Participation in River Detectives in Greater metropolitan

Number of River Detectives schools registered (Including three partner organisations)	27*
Number of students participating in the River Detectives program	>2050
Number of teachers/educators being supported	41

Activity during 2022

	Number	Participants
Coordination of teacher professional development sessions	3	8
Coordinator attendance at state-wide network meetings	2	N/A
Delivery of one incursion per school per year	21*	495
Production of one Story of Change	1 written in progress	N/A

* Greater Western Water is counted as one school (they've delivered various River Detectives activities to 8 schools)

Term one and two highlights*

- Coordination of three introductory PD sessions for teachers
- Provision of macroinvertebrate sampling kits to all schools who requested them

*More detail about these highlights can be found in the 2022 Statewide mid-year report

Term three and four highlights

Greater Western Water

Greater Western Water partner with Melbourne Water to deliver River Detectives incursions on their behalf. During 2022 they visited eight schools and delivered 20 River Detectives incursions. Presentations were made to more than 440 students.

Lyndale Greens Primary School – Dandenong north

The River Detectives program at Lyndale Greens Primary School has linked well with a school initiative to adopt nearby Booth Reserve with support from Dandenong Council.

The Grade Four students, school guides and science and environment leaders joined parks and reserve officers during September to start rehabilitation work with the planting of 800 indigenous grasses, shrubs and small trees. Students have continued to maintain the plantings, control weeds and have completed Birds in Backyard surveys both at the reserve and on school grounds.

School guide leader Tammy Culpit is planning monthly surveys of the litter and science teacher Judith Sise is eager to begin biodiversity surveys of the school's new park, a short walk away.

The Grade Two students have become Litter Monitors and want to repeat Clean Up Australia Day activities monthly.

“Parks are wonderful outdoor classrooms that provide an alternative place to learn where children can be engaged in their environment and care for it. Learning how plants grow and the animals they attract along with issues such as litter are fundamental lessons for young children.”

Lyndale Greens PS principal Ryan Forte



Judith Sise and principal Ryan Forte, students and school girl guides at their adopted Booth Reserve.

Photos courtesy of the Dandenong Star Journal

Sirius College - Eastmeadows

Sirius College enjoyed the River Detectives program and have found it of particular benefit in the delivery of their Duke of Edinburgh elective. A knowledge of waterways and catchments has added to their learning whilst experiencing hikes and camps at Wilsons Promontory and along the Surf Coast.



Mount Lilydale Mercy College

Year Seven students took part in monitoring the health of their local Olinda Creek during field work focusing on the structure and health of local ecosystems. Students examined physical, chemical and biological parameters and recorded their data on the River Detectives website.



“My class walked down to Olinda Creek in Lilydale so that we could conduct some water testing for our Year 7 Science class. We were put into five groups and we were required to investigate and observe the different surrounding areas of Olinda Creek to answer a variety of questions from examining living and non-living things to testing water levels.

We had to observe plants, animals, temperature and even keep in mind all the things that were put there by humans and all the things that grew naturally. It involved testing the water pH, observing the things that were around us and recording what we observed within the environment. Following our hands-on practical experience, we put together all the information that we discovered and then used it to complete our common assessment task questions.

It was a great opportunity to learn about a local landmark.”

Mount Lilydale Mercy College Year Seven student,
from September 2022 school newsletter

Story of Change

Our Lady of the Immaculate Conception (Sunshine) Primary School's River Detectives journey will be featured in the Melbourne Water area's written 2022 Story of Change.

The school has been part of the River Detectives program for five years and their involvement has led to the school making connections with the local Friends Group.

They have enjoyed helping with tree planting along Kororoit Creek.

Melbourne Water plan to film a digital story similar to other regions in early 2023.



Incursions

Melbourne Water joined Grade Five and Grade Six students at Albion Primary School on November 18 to look at macroinvertebrates collected from Kororoit Creek. The sample contained fly larvae, damselfly larvae, blood worms and water treaders along with a very healthy sized dragonfly nymph and lots of jumpy shrimps!

Most of the water bugs found were tolerant or very tolerant water bugs, with only a few sensitive water bugs indicating a moderately polluted water. After the floods, this was not surprising.

Students made comparisons between this sample and another bug sample that was collected from a wetland in the south-east of Melbourne. This contributed to students understanding of the types of waterbug populations that could be found in different types of water bodies and how this aids our understanding of water quality and waterway health.



Students looking for water bugs in the trays, during their sustainability class and at lunch time.

Classes completed macroinvertebrate sampling throughout October and November taking turns to write reports for the sustainability section of the school's [website](#) (scroll down to the Water Module section) – example overleaf.

34B River Detectives Report – 21/10/22

Students attended a Water incursion in the Multi-purpose room with all of the grade 3-6 students on Friday 7th October presented by Ann from Greater Western Water.

Ann introduced students to Water – the water cycle and all things water.

Students took away the following things from the incursion:

- We are drinking water maybe from millions of years ago that the Dinosaurs drank
- Toilet paper breaks down easier than tissues
- Don't put tissues down the toilet
- Only 3 things allowed in the toilet – wees, poos and toilet paper
- Also vomit goes down, but you count that as the same as poos
- Drinking water helps brain development.

Mrs Batty and Mrs Ryan went down to Kororoit Creek at to take a water sample from the creek under the Forrest Street bridge.



Students from 34B looking for water bugs in the trays, water samples from Kororoit Creek.



Five different Water Bugs were found in the water sample, They included - pogs, worms and water treaders. The bugs that were found are very tolerant which tells us that the creek is quite dirty and polluted. This is no surprise as the creek was in flood last week and it was still flowing quite quickly. There were signs of rubbish stuck in trees when we collected the water sample today.

Term three and four incursions

School	Date	Year level	Students
1. Albion PS	18/11/2022	5-6	55
2. Greater Western Water	Various x 20	various	440
		Total	495

Challenges

There has been limited interest from teachers in the incursion program this year. Incursions have been offered to all 27 schools but only one took up the offer. It is hoped that more schools will be reached in 2023.

Plans for 2023

A field trip for Year 10 students from Mt Lilydale Mercy College is being planned for the first half of the year. Melbourne Water plans to rotate students through a range of field work activities to enable students to gain a deeper understanding of how the organisation is monitoring a major billabong of the Yarra River following rehabilitation works at the site. The wetland is within the school's catchment and will make a much better field trip subject than their usual trip to the Mornington Peninsula.

Jane also hopes to deliver macroinvertebrate sessions to some of the schools new to the program over the last couple of years as school visits have not been possible due to COVID-19.

Communications and media in terms three and four

Lyndale Greens adopt Booth Reserve

23/09/2022

Like 0



Judith Sise and Principal Ryan Forte with students and school girl guides, 298079 Picture: STEWART CHAMB

1

Article in local print media

23 September 2022 Dandenong Star Journal

[River Detectives](#) > [Billabong Banter](#) > [Banter Topics](#) > [Visit to Albion Primary School](#)

Billabong Banter

[« Back to topics list](#)

banter-topics

Visit to Albion Primary School

Posted on November 29, 2022 by [Nicole Howie](#) | No Comments

Albion Primary School joined the River Detectives Program this year and have the program well and truly up and running. The school is sampling Kororoit Creek which is part of the Werribee Catchment in Melbourne's west. Kororoit Creek looks so picturesque, that you would think you were out in the country, rather than the middle of Melbourne!



Melbourne Water joined the Grade 5/6 students, on Friday to look at Macroinvertebrates from the Creek. The sample contained about 7 different bug species, including a very healthy sized dragonfly nymph and lots of jumpy shrimps!



Sustainability is embedded at Albion Primary School and the River Detectives Program is shared across all year levels as part of that philosophy. This photo shows the school's amazing vegetable garden and hen house.

Marita Ryan is the Sustainability Program Leader at Albion Primary and is currently working towards completing the Water Module as part of the Resource Smart Schools Program.



[Browse / Upload Images](#)

1

Post on the River Detective website's Billabong Banter

29 November 29 2022 blog about Albion Primary School's incursion

North East CMA

Coordinators Simon Muller then Samuel Gitahi



NORTH EAST
CATCHMENT
MANAGEMENT
AUTHORITY

Participation in River Detectives in North East during 2022

Number of Schools registered for River Detectives	5
Number of students participating in the River Detectives program	196
Number of teachers/educators being supported	7

Activity during 2022

	Number	Participants
Coordination of teacher professional development sessions	1	1
Coordinator attendance at state-wide network meetings	6	N/A
Incursion with non-River Detectives schools	2	186
Production of one Story of Change	1 written	N/A

Term one and two highlights*

- Coordination of 1 introductory PD session for teachers
- One new school joining the program (Upper Sandy Creek Primary School)

*More detail about these highlights can be found in the 2022 Statewide mid-year report

Term three and four highlights

This year, the coordinator has provided technical support to the participating schools particularly with equipment, including replacement of turbidity tubes, meters and thermometers. Technical support has been mostly remote due to travel constraints and the flooding that afflicted the region for months.

Mitta Mitta Primary School continues to be the region's most consistent school, regularly monitoring two sites on the Mitta Mitta River and embedding this activity into their learning program. The school combines water quality and bug monitoring with their annual tree planting day. North East River Detectives coordinators have enjoyed watching the way this small country school encourages older students to share their learnings with younger and new students. The school represented the North East in an 'Ask the Expert' webinar, pre-submitting questions to be posed during the session. They were also the feature of the North East's story of change.



Upper Sandy Creek Primary School joined the North East River Detectives team this year. Matthew, the managing teacher, hit the ground running with his background in Environmental Science and experience teaching environmental studies at a VCE level.

With some additional time and available staff members employed under the Youth Employment Program, the North East CMA have completed a stock take and quality assurance testing of all the backup River Detectives equipment.





Story of Change

Mitta Mitta Primary School's River Detectives journey was featured in the North East CMA region's [written](#) 2022 Story of Change.

The small rural school has participated in the program since 2017 monitoring sites on the Mitta Mitta River and Snowy Creek.

They appreciate opportunities to participate in citizen science activities to engage students in real study that extends beyond the school.

They enjoy a strong association with their local Landcare group and have worked together to revegetate riverbanks with native shrubs and breed dung beetles as part of an ongoing trial.

"Two times per term we head down to our local waterways to take water samples, do water quality tests and sample macroinvertebrates. We do it as a whole school activity with older students helping the new students with sampling and identification. The peer teaching allows them to take pride in their developing expertise."

Mitta Mitta Primary School principal Michael McBrien

School Incursions

Besides supporting the participating schools, the River Detectives program in the North East region has extended support to two other local schools this year.

In partnership with Yackandandah Landcare Group, a field day was held on June 10 at the Yack Sports Ground for Yackandandah Primary School in June 2022, with 55 students in attendance.

This activity provided an opportunity for the students to learn about water quality testing and waterbug monitoring at their local waterway, Yackandandah Creek.





A field day was held at Osbornes Flat Primary School, Yackandandah during July involving 131 students from both Osbornes Flat and Middle Indigo primary schools. Students learnt how to carry out water quality testing for temperature, pH, turbidity, phosphorus and salinity.

Other presenters from Petaurus Education Group presented activities focused on the Murray Darling Basin; the importance of planting native plants and grasses for bird and animal life, a cultural activity to learn about aboriginal art and storytelling in a hands-on session and an introduction to freshwater water bugs. They observed live water bugs and learned about their physical features along with their environmental and behavioural adaptations. The students also learned that water bugs are an indicator of water quality and gained an appreciation for their importance in keeping our freshwater systems healthy.



“All students had a fabulous time and were all able to discuss something new that they learned on the day.”

Osbornes Flat Primary School acting principal
Alisha Watson

Term three and four incursions

School	Date	Year level	Students
1. Yackandandah PS*	10/06/2022	3-6	55
2. Osborne's Flat PS * & Middle Indigo PS*	21/07/2022	3-6	131
			Total
			186

*Non RD school



Challenges

Maintaining momentum for the River Detectives Program in 2022 has been a challenge in the North East with changing internal staff and school contacts. Significant effort went in to setting up all the schools with equipment and information in the first half of the year, however, competing priorities for school has meant some of schools have not participated to the extent anticipated this year.

The impacts of on-going rainfall and flooded waterways has impacted on the safety of students being able to be involved this year.

Several of teachers who originally registered for River Detectives in the North East took leave or concluded their time at the school and making contact and involving their replacements in the program has been challenging. Supporting teachers when they are ready to take on River Detectives again will be vital to the schools and teachers continuing in the program.

Plans for 2023

North East is currently recruiting for a new part time citizen science officer and hope to have this role in place for 2023. It is hoped that this will enable greater contact with schools and to regain some of the momentum in River Detectives for schools that had reduced activity in 2022.

The region had a number of other engagement activities with schools in 2022 including a session with the Alpine School on the endangered Mountain Pygmy Possum project, the Borinya, Yackandandah and Osbornes Flat schools with a catchment and water quality focus and plan to further engage with these schools on River Detectives and other opportunities in 2023.

Communications and media

Osbornes Flat Primary School
21 July 2022 · 🌐

Osbornes Flat Primary School hosted an activity day ran by Petaurus Education Group about the Murray Darling Basin. We had Middle Indigo Primary School join in the fun. Students participated in four different activities: water bugs, cultural activity, native planting and water testing. Thank you to all involved, what a fabulous day.



👍❤️ 9 3 comments 2 shares

Petaurus Education Group
22 July 2022 · 🌐

What an incredible day we had yesterday with Osbornes Flat Primary School and Middle Indigo Primary School getting the students outdoors and participating in 4 unique activities that capture the importance of our Murray-Darling Basin through different lenses!

Thank you to both schools for having us, we hope to see you again soon! 😊



Facebook posts

about the field day involving River Detectives content on 21st July 2022 by;

- Osbornes Flat Primary School
- Petaurus Education Group



North East CMA

16 November 2022 · 🌐



Would you like to support funded citizen science programs? [North East CMA](#) is seeking to fill this part-time position that will include programs including River Detectives and Water Watch. Applications must be received by 11.59pm, 4 December 2022. For details and the recruitment kit go to <http://bit.ly/3UZAUBb>



Advertisement for River Detectives citizen-science support officer shared to:

- Beechworth community facebook page
- Wangaratta Community Noticeboard page
- Keiwa Catchment Landcare Groups page

Wimmera CMA

Coordinator Jeanie Clark



Participation in River Detectives in Wimmera during 2022

Number of River Detectives schools registered	6
Number of students participating in the River Detectives program	100+
Number of teachers/educators being supported	8

Activity during 2022	Number	Participants
Coordination of teacher professional development sessions *	10	14
Coordinator attendance at state-wide network meetings	3	N/A
Delivery of one incursion per school per year*	6	137
Provision of Water Life presentations as an on-demand PD alternative;	4	8
<ul style="list-style-type: none"> • World Wetlands Day • Introductory PD • Introduction to Salinity • Water Life Macroinvertebrate PD 		
Production of one Story of Change	1 written 1 video	N/A

**Macroinvertebrate PD Sessions and school incursions were combined in semester 2 with content adapted to cover water life (plants and macros.) 2 schools requested content about flooding in their catchment.*

Term one and two highlights*

- Coordination of three PD sessions for teachers
- Three new school joining the program (Upper Sandy Creek Primary School)
- Provision of two school incursions

*more detail about these highlights can be found in the 2022 Statewide mid-year report

Term three and four highlights Story of Change

Stawell Primary School's River Detectives journey was featured in the Wimmera CMA region's [written](#) and digital 2022 Story of Change.

Stawell has been a River Detectives school for five years, using the program in the 'water ninja' part of their 'Eco Ninja' program.

Students enjoy testing water quality at the Cato Park Lake and Federation Park wetland in Stawell and are using their knowledge of waterbugs to plan a school frog bog.

The video story is accessible at [Stawell Primary School River Detectives - YouTube](#)



48

Views



"I think the biggest change for our school is students getting the opportunity to do something for the community and for the environment that has a real purpose."

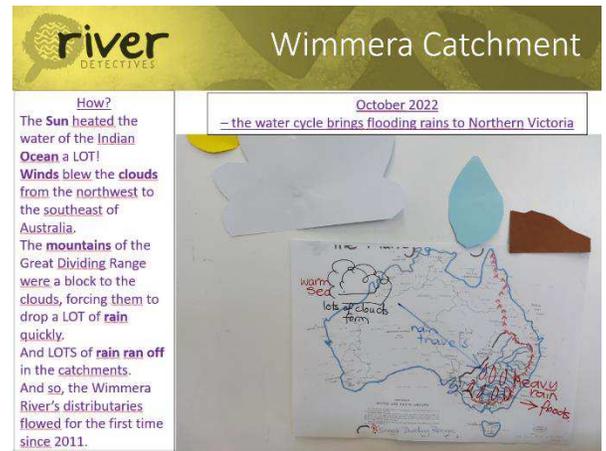
Stawell Primary School teacher Toni Stewart

Incursions

With the unexpected rain and flood situation during spring, some schools requested information about why this occurred and how flooding affected their local sites. Incursions were adapted to incorporate this content, using models and posters with teachers and students to explain concepts.



Jeanie Clark explains weather systems across Australia that lead to flooding with Jeparit Primary School P-6 students



Content was reinforced in a powerpoint provided by Jeanie.

Due to the continuing inclement weather, four schools decided to have their PD/incursions at the school rather than their adopted site. Having already visited their sites during the year this worked well as classes could use the materials provided. Students were challenged to identify as many bugs as possible and Jeanie lead a food web simulation to build on waterbug knowledge.



Two of the three teachers involved in the PD/incursion to learn about wetland water life during November with the Jeparit Primary School P-6 class

Macroinvertebrate PD alternative

The statewide macroinvertebrate powerpoint PD was adapted and distributed as a site-specific, ready-to-use resource for the staff of each Wimmera region River Detectives school. This enabled the content to be more user-friendly during the very busy time of term four and can be referred to again easily any time in the future.



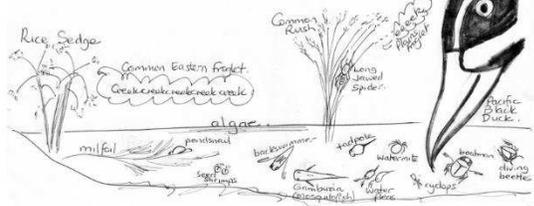
There is lots of life in the water, but most is unseen, unless you look for it. If you can see a bird or a fish, then you can be sure they are there as they will need food! This diagram shows what was in a water place where a Pacific Black Duck was feeding.

Water bugs vary in size. They vary in what habitat they live in. They vary in what they eat too.

Yarrriambiack Creek, Warradenebeal, Lewis Park (shallow water) 15/1/08

Greek Water Life in the Froglets' Home

water source: rainwater on town → gutters → stormwater drains
 quality: 610 EC (moderately low salinity), pH 7-10 (neutral)



These water bugs were found at the Rupyanyup Billabong on November 2 2022, sampling at midday:

6 pond snails



7 damselfly nymphs



7 mosquito larvae



4 boatmen



1 caddisfly larvae



Too many water fleas to count



1 large damselfly nymph and 4 smaller ones (in the Azolla – a native water plant)



4 chironomids (blood worms) – sorry photo didn't work.

Term three and four incursions

School	Date	Year level	Students
1. Jeparit Primary School	25/10/2022	P-6	16
2. Rupyanyup Primary School	2/11/2022	P-2	25
3. Stawell Primary School	11/11/2022	3-4	23
4. Jeparit Primary School	22/11/2022	P-6	15
Total			79

Challenges

Flood impacts

Jeparit Primary School didn't think they would be able to reschedule another macro session when it was unsafe to collect waterbugs from the flooded river, so Jeanie pivoted to instead focus on the Wimmera River. The session was adapted to cover catchment education and the link between the Indian Ocean weather, the Great Dividing Range and the path of flood water in the Wimmera region. Teachers and students were very engaged by this timely PD/incursion opportunity. Later, they made time to schedule the water life PD incursion with Jeanie and see what life had made it through the floods.

Stawell Primary School's water life PD/incursion was repeatedly rescheduled due to inclement weather and flooding, but did eventually take place.

Staff from Minyip Primary School and Dimboola Memorial Secondary College found it difficult to find a workable slot in the timetable to complete the PD/incursion once the flooding eased.

Continuing impacts of Covid and curriculum demands

Teachers have felt the pinch with many absences during the year and pressure from the State Government to focus on literacy and numeracy. Jeanie has presented to a prospective school to demonstrate how they could embed River Detectives in literacy and numeracy and is waiting to see if they will register for 2023.

Plans for 2023

Nine schools are interested in the program for 2023. Several have major changes in staff and will make their decision to register when those staff are on board.

The Wimmera region has a new school coming on board in 2023, with a new staff member during 2022 now ready to join the program. She brings years of prior experience with Waterwatch and her own degree in biology and environmental science, so minimal support should be needed. The challenge will be to provide PD to extend her!

Jeanie will need to tailor introductory workshops as there are experienced long-term River Detectives teachers in the region who only need to demonstrate that they know how to use the equipment rather than hear the breadth of content required by new teachers.

Jeanie will continue to act flexibly to react to events taking place in the environment such as floods, or other things teachers draw our attention to.

The region would like to get all schools involved in salinity testing in May, traditionally Saltwatch month, as this continues to be an important environmental issue in the Wimmera region.

World Wetlands Day 2023 will again be used as a hook to encourage engagement with their local water place early in the school year.

Literacy and numeracy will be a priority of State Government so this will need to be kept this in mind when approaching schools for their precious time.

The Wimmera CMA has not tagged any projects for partnerships during 2023.

Testimonials

Quotes from end of year evaluation surveys by teachers statewide

What were your 2022 highlights?

"The water bugs incursion was a big highlight. Students left feeling very excited for our next trip to the creek for testing."

Russell Taylor-Shaw, Deans Marsh Primary School, Corangamite region

"Being able to get out of school to a nearby river and do learning in the field."

Dave Campbell, Sacred Heart College Geelong, Corangamite region

"Our students love to compare data across years."

Georgie Green, Skipton Primary School, Corangamite region



"Linking River Detectives with Clean Up Australia and Marine Ambassadors."

Judith Sise, Lyndale Greens Primary School, Melbourne Water area

"Grade 5/6 students using their learning from River Detectives activities to help with their presentation at the Kids Teaching Kids Conference."

Travis Pool, Malmsbury Primary School, North Central region

"Encouraging students to actively engage with our onsite wetlands and their fascination levels when being able to look at the waterbug data."

Rachel McMurtrie, St Mary of the Cross MacKillop Primary School, Melbourne Water area

"Getting students to understand how amazing their local creeks and rivers are. Watching students make connections between rain, pollution and waterway health."

Jess Lazarus, Environmental Education for Kids,
Melbourne Water area



"The principal has taught the River Detectives at a previous school and can see the benefits. All schools have finally realised that getting children outside and in contact with nature is good for their mental health. This program combines all of this with great opportunities for maths and science which is necessary for children's learning and ultimately for the curriculum."

Serena Everill, Chewton Primary school,
North Central region

"We'd like to be involved in 2023. As a previous senior Biology and Environmental Science teacher I know how valuable this program can be for students."

Nerida Holland, St Mary's Catholic Primary
School Warracknabeal, Wimmera region

"The macroinvertebrate PD that I attended. I received heaps of valuable resources and information at the session."

Ro Rimmer, Victory Christian College,
North Central region



"Hands on science that feels authentic. Kids love looking at the variety of bugs in the water: especially when they thought there was nothing in the water!"

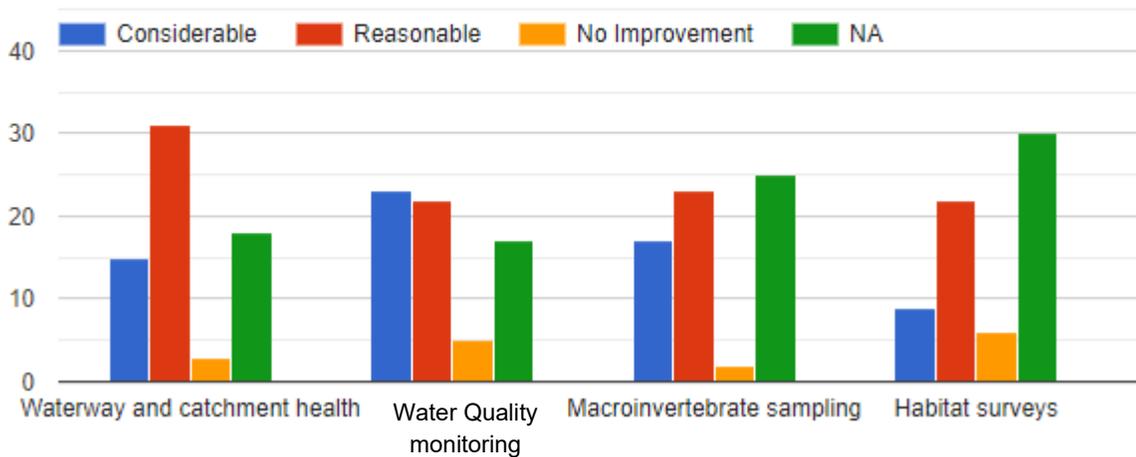
Rachel Fallon, Tawonga Primary School,
North East region

2022 Evaluation

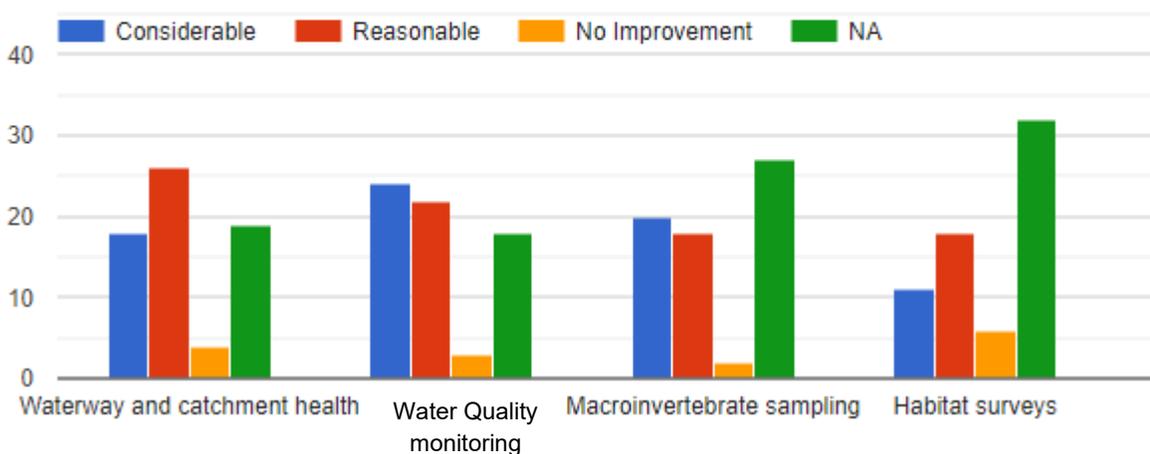
Evaluation statistics from 2022 end of year surveys by teachers statewide

64 respondents from 95 school participating in River Detectives in 2022

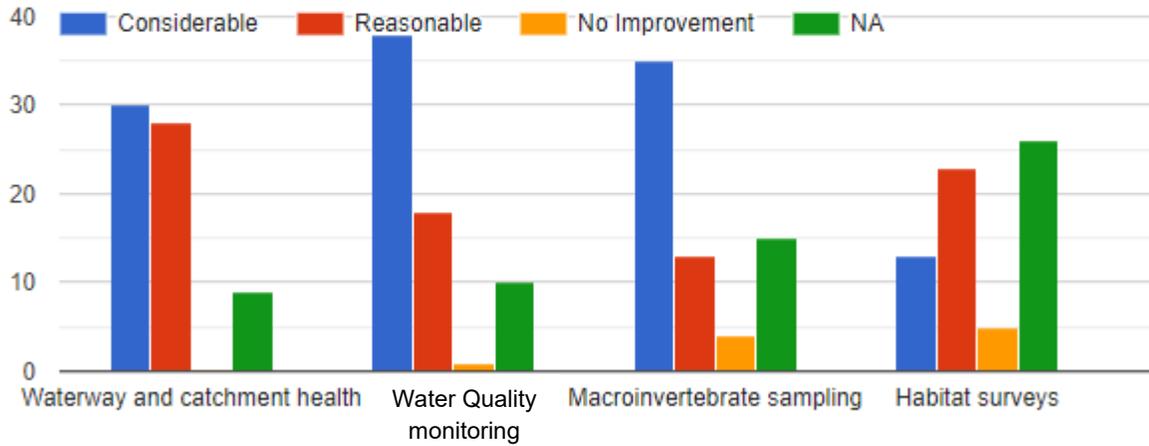
On average, what improvement did you notice in the knowledge level of **adults involved in delivering the program** ?



On average, what improvement did you notice in the skill level of **adults involved in delivering the program** ?



On average, what improvement did you notice in the knowledge level of **students** ?



On average, what improvement did you notice in the skill level of **students** ?

