North Central WaterWatch Volunteer Survey Report 2022-2023

Acknowledgment of Country

Contents

North Central WaterWatch

Introduction

WaterWatch Victoria was established in 1993 and has since become an important and successful Citizen Science program, connecting local communities to river health and sustainable waterway management. The continued contribution of committed volunteers to collect river health data about the ecological health and condition of our waterways is the foundation of the program.

The North Central Catchment Management Authority (CMA) has been coordinating the North Central WaterWatch program for 30 years. The program would not be possible without the passion and dedication of our 70 active volunteers, who monitor 125 sites across the North Central region. The data collected by these volunteers gives insights into changes in our waterways over time, and supports sustainable management for people, agriculture, and the environment into the future.

WaterWatch volunteer April with River Detectives educator Serena at their induction to our programs on Forest Creek at Chewton.

2022-2023 Volunteer Survey

A volunteer survey was undertaken during early 2023 to ensure the North Central CMA continues to support volunteers in the best way possible. Survey results provide an insight into what the North Central CMA is doing well, and also areas of the program that could be strengthened and improved for current and future volunteers.

The 2022-23 survey is based on the 2021 survey that was designed by Dr Alan Curtis, Adjunct Research Professor the Graham Centre for Agricultural Innovation, Charles Sturt University, with input from the North Central CMA's Citizen Science team.

Survey objectives

- To evaluate the impact of participation in North Central WaterWatch.
- To gauge the level of satisfaction of current volunteers with North Central WaterWatch.
- To capture a snapshot of the demographics of current North Central WaterWatch volunteers.
- To identify current issues or concerns with the program and highlight areas for further improvement.

Survey method

The survey was a point in time (not longitudinal) assessment designed to be replicated in future years so the impact of follow-up actions and emerging trends can be tracked over time. The survey is intended to be conducted at intervals of no less than 24 months. This was the second survey of its kind, with the previous survey in winter 2021.

The survey comprised five sets of questions across four key themes: Engagement and Experience; Satisfaction; Impact; and Areas for Improvement. Volunteers were asked to rate and comment on their experience during 2022. The survey was distributed to the 70 current volunteers via email with a link to fill out an electronic survey using Alchemer. The survey was open for a period of nine weeks from 17 February to 14 April 2023.

Executive Summary

Twenty responses to the North Central WaterWatch Volunteer Survey 2022-2023 were received (including 14 fully complete and six partially complete). This reflects a roughly 29 per cent participation rate from the pool of 70 current North Central WaterWatch volunteers. This is a reduction from the 35 responses received to the 2021 survey.

Responses provided insights into volunteer demographics, engagement and experience, levels of participation, perceived impacts of the program, and areas for improvement for the North Central WaterWatch program. This included direct feedback which will assist the program to continue to best support volunteers.

Recommended improvements to the program include greater opportunities for networking and socialising among volunteers; greater reporting of trends in the WaterWatch data; more timely feedback from North Central WaterWatch staff, and more targeted recruitment of underrepresented communities.

Results and Discussion

Demographics

The age of WaterWatch volunteers ranged from 32 to 79 years old, with the majority (72 per cent) being in their 60s and 70s. While no school-aged volunteers are registered in North Central WaterWatch, this age group is captured through participation in North Central CMA's River Detectives program, which engages primary and secondary school students in water-related citizen science activities across the region. Thirty-two schools registered for River Detectives during the 2022 school year and again in 2023, reaching about 800 students. The age group most underrepresented in North Central Citizen Science programs is youth between the ages of 15 and 30. Greater opportunities for youth and young adults to engage in citizen science programs should be explored in the North Central CMA region going forward.

When asked to describe their gender, most respondents identified as male, with 69 per cent male and 31 per cent female. None of the respondents identified as being an Aboriginal or Torres Strait Islander person. Most respondents were born in Australia, with two born overseas (in the United States of America and the United Kingdom).

There is roughly an even spread of volunteers living in an urban vs rural setting. The two questions covering this were a) Do you live a city, town or village setting? and b) Do you live on a rural property? Of the 14 respondents to question a), eight answered "yes" and six answered "no". The same 14 people responded to question b), with seven answering "yes" and seven "no". One person responded "yes" to both questions.

Do you live in an urban or a rural setting?

- Urban 50%
- Rural 43%
- Both 7%
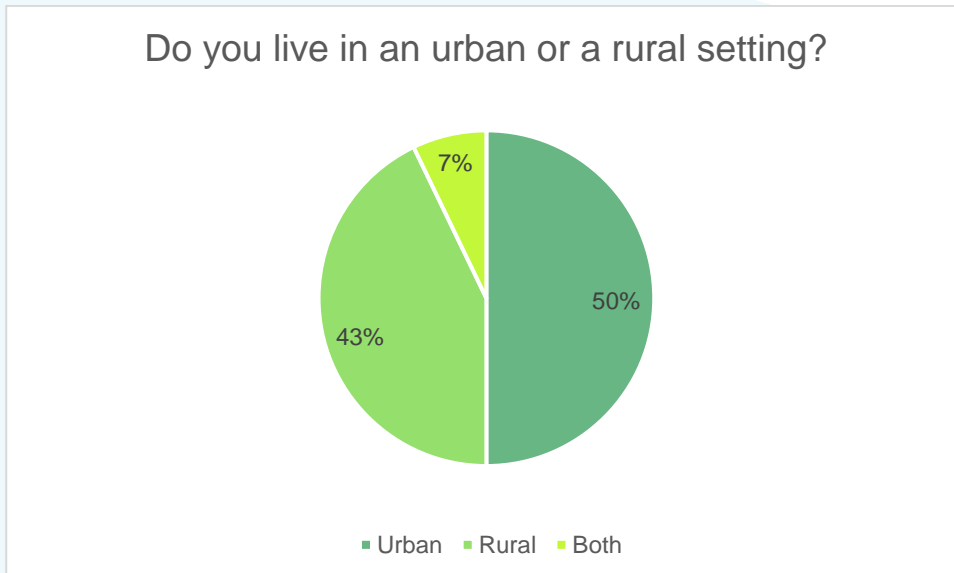
Figure 1. Distribution of respondents living in an urban vs a rural setting (n=14)

Of the respondents, the majority (72 per cent) identified as "non-farmers", with 14 per cent identifying as "hobby-farmers", and 14 per cent identifying as "full-time farmers". This closely aligns with the results from the 2021 volunteer survey, where 66 per cent identified as "non-farmers". This is an opportunity to further explore what could be acting as barriers to

farmer participation (e.g. limited capacity for time commitment, lack of knowledge of the program) through targeted gathering of information from other programs such as Landcare or other North Central CMA projects. Only three out of 14 people answered "yes" to the question "Has the North Central CMA undertaken any on-ground works on your property?", suggesting there may not be a significant overlap between WaterWatch volunteers and landholders who are part of North Central CMA's on-ground restoration projects.

Many North Central WaterWatch volunteers are also Landcare volunteers, with nine out of 14 responding "yes" to being a member of their local Landcare group. In addition, there seems to be a commitment to regular volunteering in general among the cohort. Respondents were asked how many hours per week, on average, they spent on voluntary activities in 2022 (e.g. WaterWatch, Meals on Wheels, Landcare, sporting clubs, Rotary, committees) (see Figure 2). One person estimated spending more than 100 hours per week on volunteer work. The majority of people worked 0.5 - 5 volunteer hours per week. The average number of hours worked (excluding the response of 100+ hours as an outlier) was 4.4 hours every week.
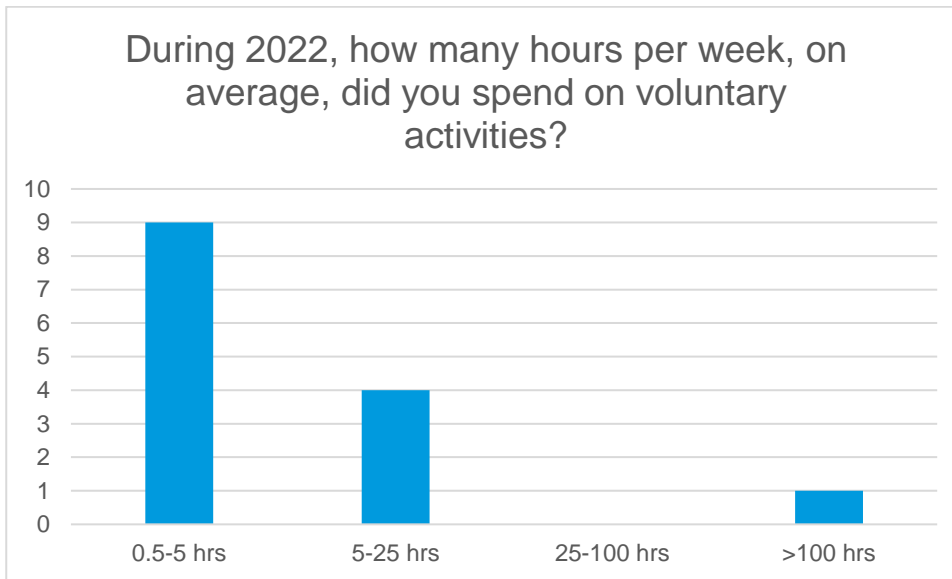

Figure 2. Average weekly hours spent volunteering (both with WaterWatch and generally) in 2022 (n=14)

Engagement and experience

Volunteer numbers have steadily grown over the years, from 39 volunteers in 2017-18 to 70 volunteers in 2022. Encouragingly, there has been an increase of nine volunteers since the 2021 volunteer survey. This may indicate a recovery from the drop in engagement and enthusiasm experienced during the COVID-19 pandemic and related restrictions.

Many respondents have been volunteering with WaterWatch for more than 10 years, showing a long-term commitment to the program (Figure 3). There were also some newer volunteers, with four respondents having spent less than two years so far as a WaterWatch volunteer.
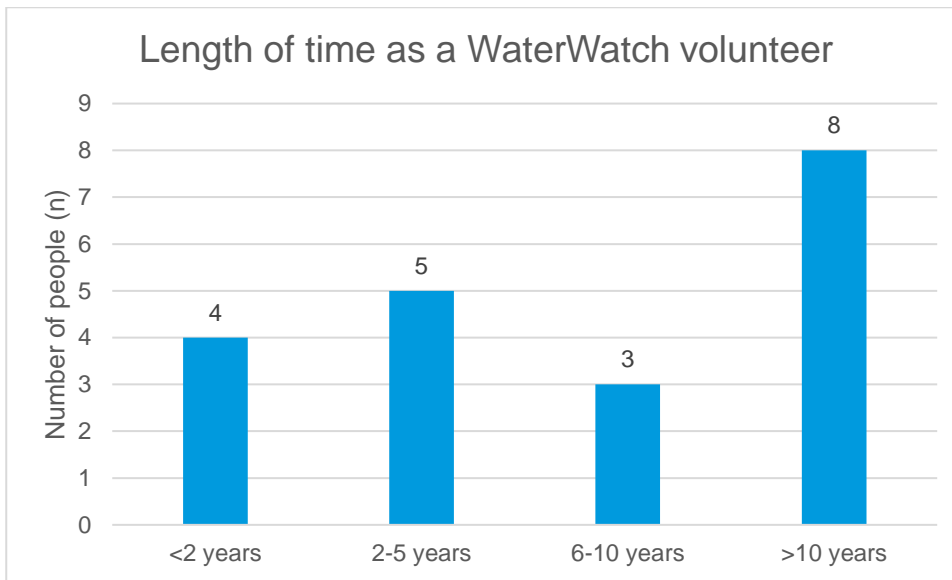

Figure 3. Length of time as a WaterWatch volunteer (n=20)

Volunteers were asked to select which 2022 North Central WaterWatch activities they had participated in. All respondents had participated in water quality monitoring, supporting the fact that monitoring of water quality data (e.g. pH, salinity, turbidity, reactive phosphorus) at designated sites continues to represent the core activity of the North Central WaterWatch program, and is the activity that volunteers are most interested in or able to commit to. There was also a reasonable level of participation from respondents in complementary activities such as training and other community events (see Figure 4). Waterbug monitoring, waterbug training workshops, and shadow-testing/refresher training were the most participated in activities after water quality monitoring.
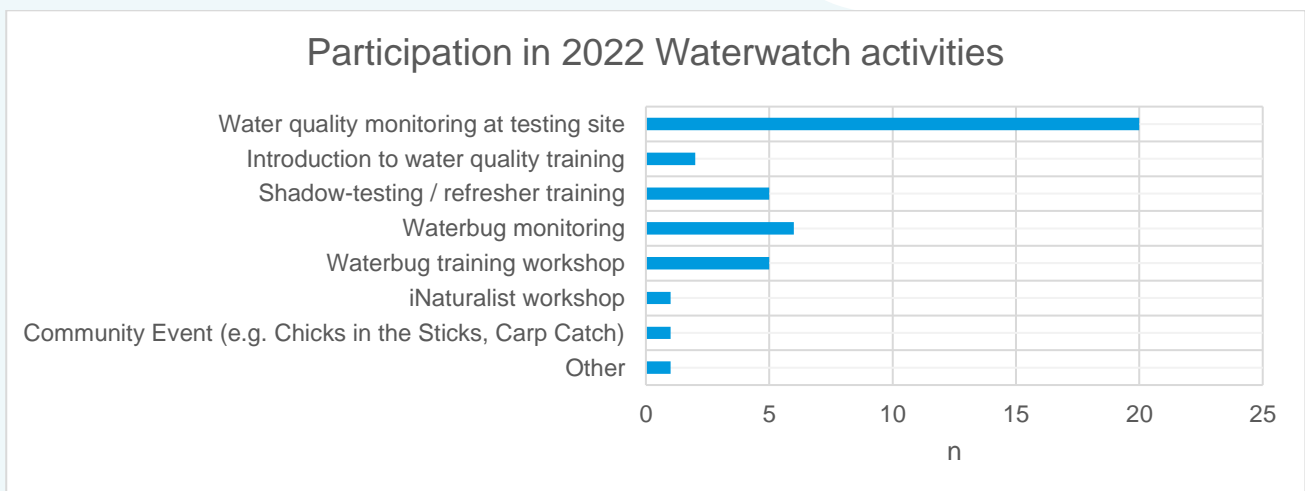

Figure 4. Number of respondents who participated in 2022 North Central WaterWatch activities (n=20)

Satisfaction

All North Central WaterWatch volunteers who responded to the survey responded that they enjoy being involved in the program. Reasons that people enjoyed being involved included wanting to see a clean environment, the value of collecting important long-term data to see changes over time, good support from staff, being useful and contributing, understanding local waterways, helping to protect waterways, the chance to get outside and observe nature, and the feeling of making a difference to the bigger picture.

"To help make a difference to the big picture in waterway health monitoring."

"Feeling that we are contributing to something for the environment."

"I really like to get out and visit the river and observe what's going on."

"Because I see the long-term collection of waterway data is essential in plotting any changes in the health of our rivers and creeks."

These responses are consistent with the key themes identified in the 2021 North Central WaterWatch Volunteer Survey Report, summarised in Figure 5 below.

The enjoyment of undertaking the samples, seeing trends in the data, and connecting to the local environment through an enhanced understanding of its condition.

Connecting to other people, the wider community, and the opportunity for social interaction.
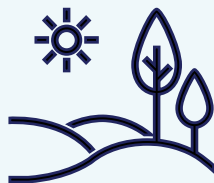
Being able to get outdoors and observe nature.

The feeling of being useful and helpful and that the data collected is valued.

Figure 5. Key areas of enjoyment for WaterWatch volunteers.

Volunteers were also asked to rate their satisfaction with different elements of the North Central WaterWatch program using a five-star rating system, one being lowest, five highest (see Figure 6). Note not all respondents rated all elements, selecting "N/A" for some or leaving them blank.

There were five areas of high satisfaction (receiving 4-5 stars from all respondents) which were:

- Staff are approachable and responsive
- Equipment provided for you to perform your volunteering activities
- Level of support from North Central CMA staff
- The extent the data collected is valued by WaterWatch staff
- Introduction to water quality training

The three areas which respondents were least satisfied with (with more than one third giving a 2-3 star rating) were:

- Opportunity to socialise and make new friends
- Opportunity to network with other volunteers
- Opportunities to network with scientists, North Central CMA staff and/or natural resource managers

These three areas received a similar low rating in the 2021 survey, suggesting more work needs to be done to improve opportunities for volunteers to socialise and network with each other and professionals.

Satisfaction with elements of the WaterWatch program
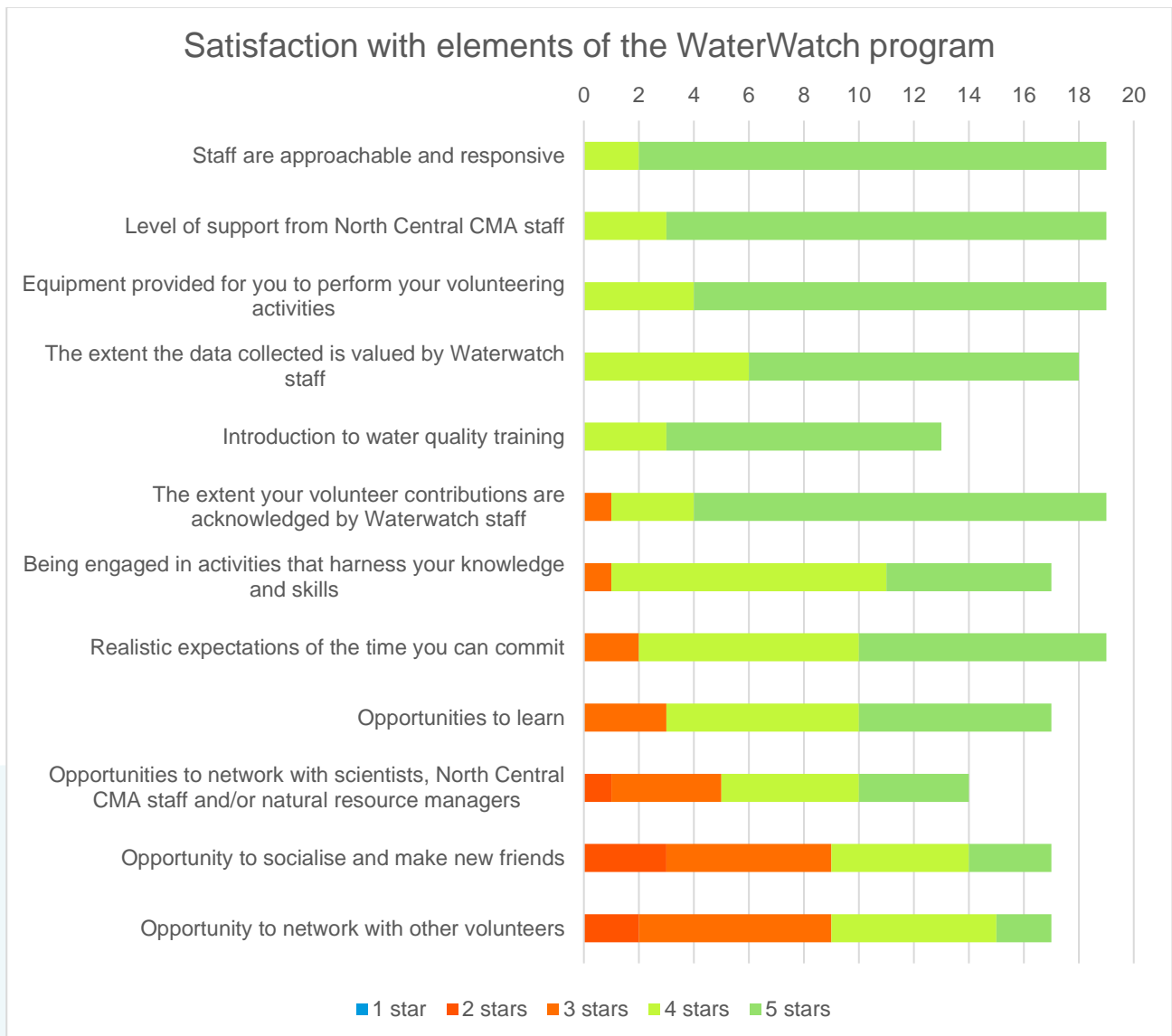
Figure 6. Satisfaction with elements of the North Central WaterWatch program.

Impact

The potential impacts (i.e., benefits) of the WaterWatch program was also assessed using a five-star rating system (Figure 7).

All but one of the potential impacts were given four or five stars by more than half of respondents. The impact of "networks established with other volunteers" was the lowest rated, given one, two, or three stars by 10 out of 15 people. This aligns with the feedback given in the Satisfaction section. Networking with other volunteers is an area which could be improved.

The three most highly rated impacts (with the most five-star ratings) included:

- Sense of attachment or connection to nature
- Ability of volunteers to contribute to citizen science
- Understanding of the importance of land, water, and biodiversity

Respondents were also given the option to write in additional impacts they had identified. The three impacts which were added by respondents were: a) Connection with youth – training students that ask to learn these skills, b) Confidence to offer water quality testing at school field days organised by Landcare, and c) Basically observe what's actually happening with water and its quality.

The broad range of impacts rated shows the varied benefits provided by the program, as well as the potential for further unidentified benefits such as those written in manually by respondents.
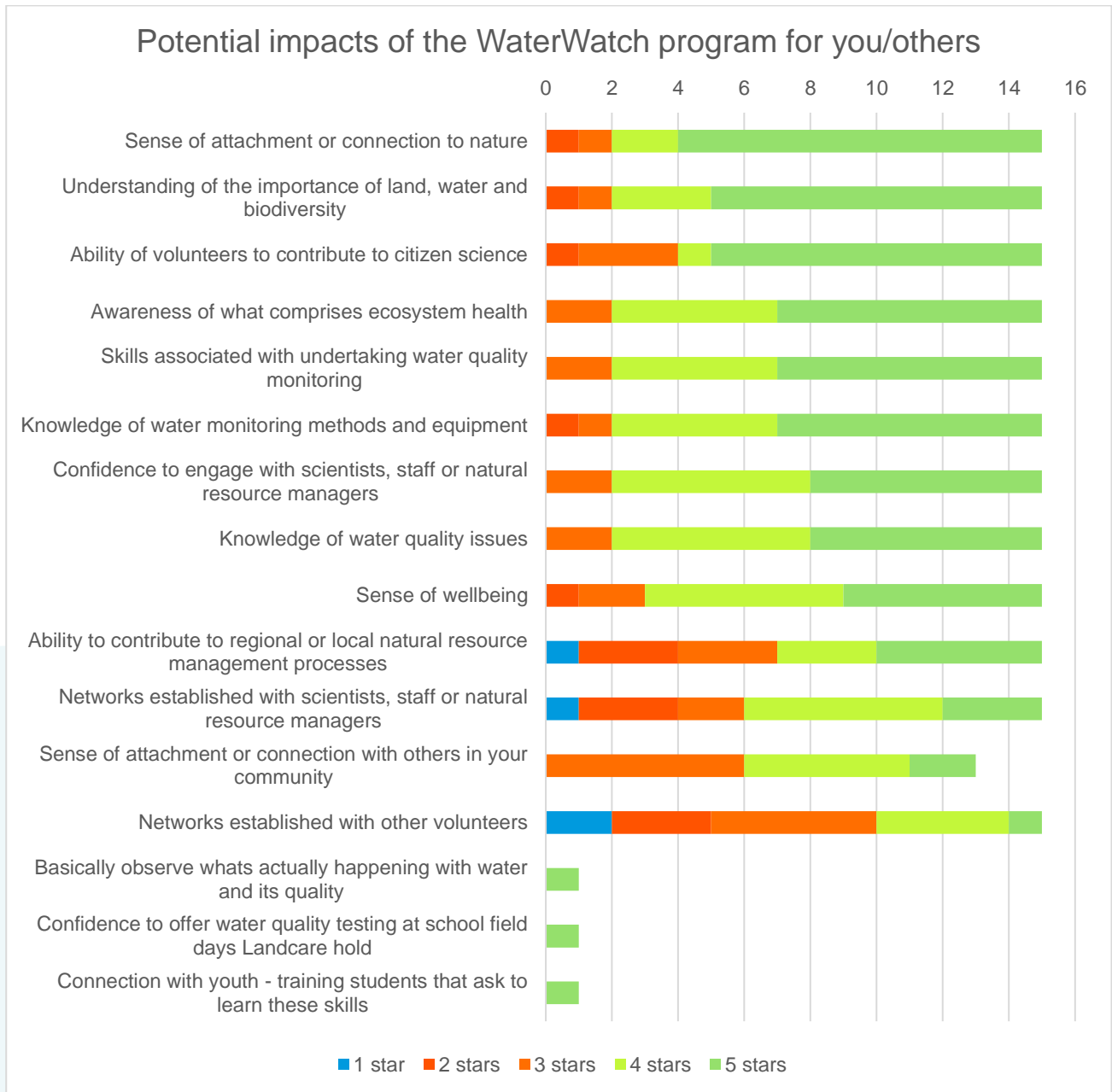

Figure 7. Volunteer assessment of the impacts of WaterWatch.

Areas for improvement

Volunteers were asked for suggestions on how North Central WaterWatch could be improved using a free-text field. The 10 responses are shown below:

"Pass information back to volunteers regularly on how the rivers and creeks we are monitoring are doing compared to times past."

"I haven't been to a training day in a while or a validation session. It would be nice to just catch up with North Central CMA WaterWatch officers and other volunteers."

"Better response to feedback from volunteers who highlight issues with the data collection terminology, website irregularities, or the inappropriate number of decimal places listed with some results."

"Fine as it is, from my perspective/ involvement."

"As a new volunteer I found the instruction booklet a bit confusing at first so a bit of trial and error. I think an explanation of what the data means and what are appropriate measurements could be good."

"It would be great to learn more about Bendigo Creek when citizen science project volunteers get together for QA/QC events - maybe a guest speaker from Ag Vic (Alligator Weed), Coliban Water (inputs from sewerage farm), City of Greater Bendigo (Reimagining Bendigo Creek Project), DEECA (Central Deborah water inputs), etc."

"Would like a report from time to time on the status of river health."

"More opportunities to get kit checked."

"I suggest the North Central CMA has excellent staff and realistically provide the best outcomes and support."

"More meetings to discuss issues and ways to influence management actions."

Feedback ranged from positive to constructive. There were requests for more opportunities to meet up or receive training, including suggestions for future guest speakers. Additional practical support was requested, in the form of checking water monitoring kits and updating resources which volunteers draw on (such as manuals and web pages).

It is clear volunteers have a strong investment in the data they collect and want to see where the results end up, in the form of formal reports and regular information sharing about changes to their waterways over time.

Recommendations

Recommendations from 2022-2023 survey

The findings of this report have been reviewed by North Central WaterWatch co-ordinators who make the following recommendations for the program going forward.

1. Improve opportunities for volunteers to network and socialise with each other and industry professionals.

2. Explore further opportunities for youth and young adults (aged 15-30) to engage in citizen science programs in the North Central region.

3. Greater reporting of water quality results and data trends. Ensure annual River Health Snapshot reports are published and distributed in a timely manner.

4. Explore barriers to farmer participation in WaterWatch volunteering through targeted gathering of information from other programs (e.g. Landcare, other North Central CMA projects).

5. Initiate conversations with North Central WaterWatch volunteers to understand any barriers which prevented responses to the 2023 survey.

6. Many sites do not fall within a citizen science program area and therefore are not reported on in the suite of annual SnapShot reports. Consider development of a broader annual WaterWatch snapshot report or site summary reports for individuals to feedback to those volunteers.

7. Re-survey volunteers every 12 to 24 months.

Thank you to all the WaterWatch volunteers who took part in the program in 2022 and to those who completed this survey. We look forward to working alongside you again in 2023-24.

Progress on recommendations from the 2021 survey

Below is a summary of progress made against recommendations from the 2021 report:

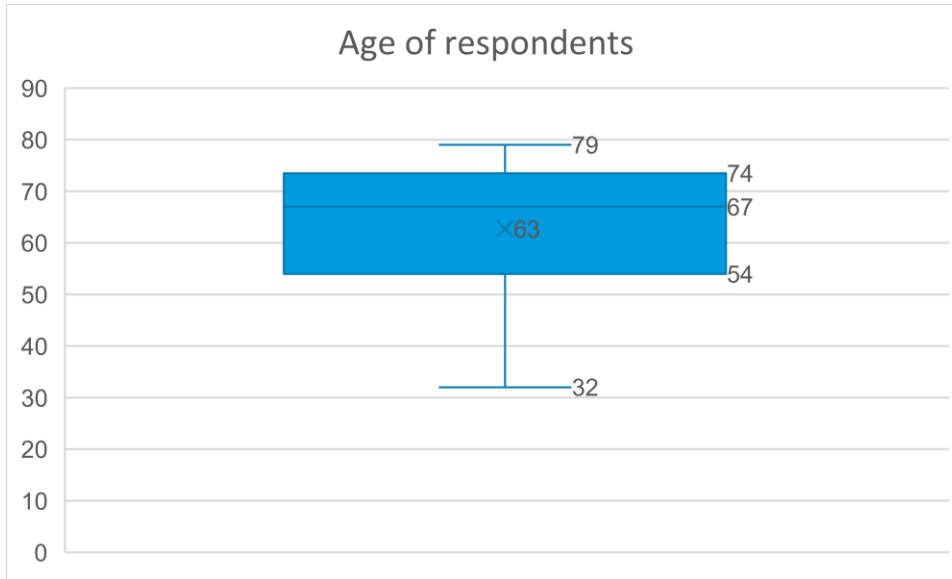| Recommendation	Progress to date
1. Create opportunities for volunteers to get together in person once COVID-19 restrictions ease and/or and when safe to do so.	• In-person workshops and other events were organised to create opportunities for North Central WaterWatch volunteers to gather in 2022. These included a Waterbug workshop with waterbug guru John Gooderham (May 2022), two iNaturalist workshops (September 2022) and four Waterbug surveys in spring for flagship projects (Castlemaine Urban Waterways, a Healthy Coliban, Tullaroop Catchment and Reimagining Bendigo Creek). • In early 2023 we celebrated 30 years of WaterWatch with an event in March attended by 86 WaterWatch staff and volunteers from across Victoria. Guest speakers from Merri Platy-paddle and City of Greater Bendigo spoke on the Reimagining Bendigo Creek project.
2. Consider other methods of engaging and connecting volunteers to share experiences, foster networks and connection in uncertain times.	• A trial has begun to explore if using Microsoft Teams will facilitate additional connections and sharing between volunteers and others.
3. Carry out shadow-testing with volunteers at their monitoring sites once restrictions allow to improve QA/QC and to reinvigorate participation in the program.	• In-person shadow-testing with volunteers resumed in 2022 and is continuing in 2023 with 29 WaterWatch volunteers having had one-on-one refresher training over the past 18 months.
4. Greater reporting of water quality results and data trends. Ensure annual River Health Snapshot reports are published and distributed in a timely manner.	• River Health Snapshot Reports were published for 2021 collected data for six projects including; Caring for the Campaspe; Reimagining Bendigo Creek; RiverScan; Castlemaine Urban Waterways; A Healthy Coliban Catchment, and Tullaroop Catchment. • River Health Snapshot Reports are currently being drafted for projects with 2022 collected citizen science data as well as a summary of all data collected by North Central WaterWatch since 1993 to acknowledge the 30-year anniversary of the program.

5. Close the loop with volunteers ensuring queries are followed-up and feedback is given in a timely manner.	• Efforts have been made to ensure queries from volunteers were followed up by the Citizen Science team in a timely manner.
6. Targeted recruitment of more youth and farming communities to the North Central WaterWatch program.	• Exploring opportunities for recruitment of youth and farming communities has been a focus, with initial planning for a project with Youth Take Over in 2023 underway. • We are currently exploring a partnership with Bendigo Community Health and Victoria Fisheries Authority in how to better engage new arrivals of Karen people to regional Victoria in waterway and fishing literacy.
7. Explore opportunities beyond traditional long-term water quality monitoring for volunteers to contribute to the monitoring and management of local waterways.	• Two workshops were held during spring to allow volunteers to upskill in capturing biodiversity observations during the iNaturalist app during a Moth Light Night and Wildflower Walk. • The team promoted the Spring into Citizen Science calendar of events during spring in 2021 and 2022 – encouraging the community to participate in other citizen science activities including the Backyard Bird Count, Pollinator Week and the Great Southern Bioblitz. • We have partnered with a Deakin University honors study into the prevalence of pesticides in Australian waterways and are supporting WaterWatch volunteers and River Detectives schools to participate in Pesticide Watch during 2023.
8. Re-survey every 12-24 months.	• 2022/23 survey has been completed.

Appendixes

1. Results
2. WaterWatch Volunteer Survey 2023

Appendix 1. Results

Age

Age of respondents

Mean age = 63; Median age = 67 (n = 14)

Gender

What gender do you identify as?

31%

69%

■ Male ■ Female
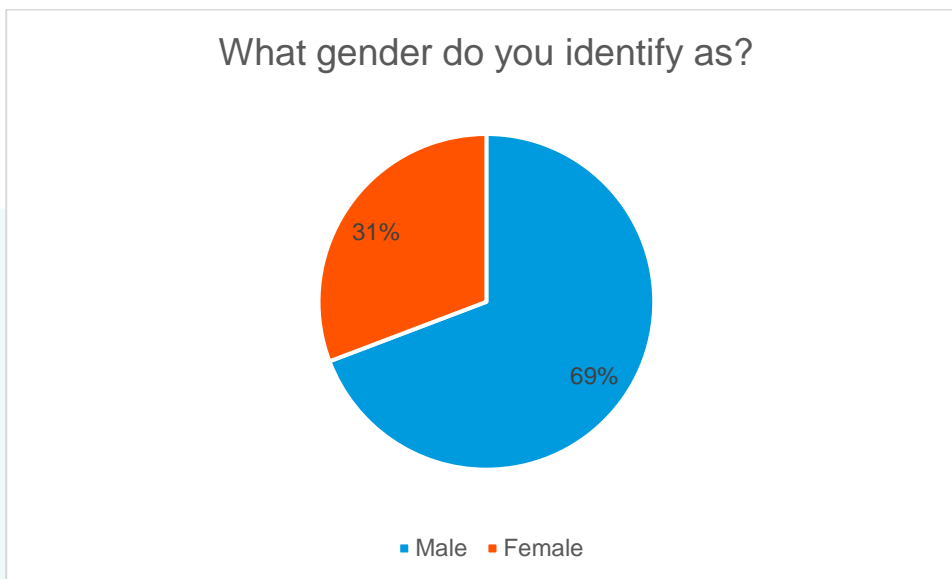
Enjoyment

	Yes	No	N	DNR
Do you enjoy being part of WaterWatch?	100%	0%	19	1

N = Number of respondents; DNR = Did not respond

Setting

	Yes		No		N	DNR
Do you live in a city, town or village setting?	8	57%	6	43%	14	6
Do you live on a rural property?	7	50%	7	50%	14	6

N = Number of respondents; DNR = Did not respond

Please select the term that best describes the extent you see yourself as a farmer

	Full-time farmer		Hobby-farmer		Part-time farmer	Non-farmer		N	DNR
Answer	2	14%	2	14%	0	10	72%	14	6

N = Number of respondents; DNR = Did not respond

Has the North Central CMA undertaken any on-ground works on your property?

	Yes		No		Unsure	N	DNR
Answer	3	21%	11	79%	0	14	6

N = Number of respondents; DNR = Did not respond

Volunteering

	Yes		No		N	DNR
Landcare member in 2022?	9	64%	5	36%	14	6

N = Number of respondents; DNR = Did not respond

	Respondent	Estimated hours per week
Number of volunteer hours per week in 2022 (e.g. WaterWatch, meals on wheels, Landcare, sporting clubs, Rotary, committees)	1	0.5
	2	1
	3	1
	4	1
	5	1
	6	1.5
	7	2
	8	2
	9	3
	10	6
	11	6.5
	12	6.5
	13	25
	14	100 plus

Appendix 2. Survey Questions

2023 North Central Waterwatch Volunteer Survey

WATERWATCH
North Central
Communities Caring for Catchments

Dear valued Waterwatch volunteer,

The team at North Central Waterwatch are keen to better understand the impact our program has on our volunteer's knowledge, skills and attitudes, as well as impact on your health and wellbeing.

This information helps us to demonstrate the value of the program to our investors and attract funding to maintain and improve the program.
We hope you can find 10 minutes to complete this confidential survey to help improve Waterwatch and ensure its ongoing success.

Many thanks,

Tania and the Citizen Science Team

Engagement and Experience with Waterwatch

1. What length of time have you been a Waterwatch volunteer?

   ○ <2 years

   ○ 2-5 years

   ○ 6-10 years

   ○ >10 years

2. During 2022 , which Waterwatch activities did you participate in?

   ☐ Water quality monitoring at testing site

   ☐ Introduction to water quality training with North Central CMA staff

   ☐ Shadow-testing / refresher training with North Central CMA staff

   ☐ Waterbug monitoring

   ☐ Waterbug training workshop with John Gooderham

   ☐ iNaturalist workshop

   ☐ Community Event - (Bendigo Sustainability Festival, Chick in the Sticks, Carp Catch Kerang or Cohuna, Elmore Field Day)

   ☐ Other - Please specify

Your satisfaction with Waterwatch

3. Please rate your level of satisfaction of elements of the Waterwatch program as listed below from 1 (lowest) to 5 (highest).

	Satisfaction
Introduction to water quality training	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
Level of support from North Central CMA staff	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
Staff are approachable and responsive	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
Equipment provided for you to perform your volunteering activities	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
Opportunities to learn	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
Opportunities to network with scientists, North Central CMA staff and/or natural resource managers	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
Opportunity to network with other volunteers	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
Opportunity to socialise and make new friends	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
Being engaged in activities that harness your knowledge and skills	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
Realistic expectations of the time you can commit	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
The extent the data collected is valued by Waterwatch staff	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable
The extent your volunteer contributions are acknowledged by Waterwatch staff	✖ ☆ ☆ ☆ ☆ ☆ ○ Not Applicable

4. Do you enjoy being involved in North Central Waterwatch.

○ Yes - Please tell us why

○ No - Please tell us why not

Impact of the Waterwatch program

5. Please provide your assessment of the impact of Waterwatch for the topics listed below.
1 - no impact to 5 - very positive impact.

The outcome could be for you or other volunteers you have direct knowledge of.

	Potential impacts of the Waterwatch program for you /others
Knowledge of water quality issues	✖ ★ ★ ★ ★ ★
Knowledge of water monitoring methods and equipment	✖ ★ ★ ★ ★ ★
Skills associated with undertaking water quality monitoring	✖ ★ ★ ★ ★ ★
Confidence to engage with scientists, staff or natural resource managers	✖ ★ ★ ★ ★ ★
Awareness of what comprises ecosystem health	✖ ★ ★ ★ ★ ★
Understanding of the importance of land, water and biodiversity	✖ ★ ★ ★ ★ ★
Networks established with scientists, staff or natural resource managers	✖ ★ ★ ★ ★ ★
Networks established with other volunteers	✖ ★ ★ ★ ★ ★
Ability of volunteers to contribute to citizen science	✖ ★ ★ ★ ★ ★
Ability to contribute to regional or local natural resource management processes (e.g. plans or their implementation such as a Regional Catchment Strategy)	✖ ★ ★ ★ ★ ★
Sense of attachment or connection to nature	✖ ★ ★ ★ ★ ★
Sense of wellbeing	✖ ★ ★ ★ ★ ★
Sense of attachment or connection with others in your community	✖ ★ ★ ★ ★ ★
Enter another option	✖ ★ ★ ★ ★ ★
Enter another option	✖ ★ ★ ★ ★ ★
Enter another option	✖ ★ ★ ★ ★ ★

Areas for improvement

6. Please provide suggestions on how we can improve the North Central Waterwatch program

Background information

7. Do you live a city, town or village setting?

○ Yes

○ No

8. Do you live on a rural property?

○ Yes

○ No

9. During 2022, how many hours per week, on average, did you spend on voluntary activities?
(e.g. Waterwatch, meals on wheels, Landcare, sporting clubs, Rotary, committees)

[_____] hours

10. Please select the term that best describes the extent you see yourself as a farmer

○ Non-farmer

○ Hobby-farmer

○ Part-time farmer

○ Full-time farmer

11. Are you of member or involved with a local Landcare goup?

○ Yes

○ No

○ If yes, which group [_____]

12. Has the North Central CMA undertaken any onground works on your property?

○ Yes

○ No

○ Unsure

Demographics

13. How old are you

[   ] years

14. What gender do you identify as?

[   ]

15. Do you indentify as being an Aboriginal or Torres Strait Islander person

○ Yes

○ No

○ Prefer not to say

16. In which country were you born?

○ Australia

○ Elsewhere - Please specify   [   ]

Thank You!

17. Thank you for taking the time to complete this survey.

To go into the draw to win a prize valued at $50, please enter your name below.

*All names will be decoupled from your survey answers so they remain anonymous.

Name   [   ]