



ACT Water Strategy 2021 Report Card



ACT
Government

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Acknowledgment of Country

Sharing Ngunnawal people's perspectives on looking after water

*Dhawura nguna ngurumbangu
gunangu Ngunnawal.*

This country is Ngunnawal
(ancestral/spiritual) homeland.

*Nginggada dindi dhawura Ngunnawalbun
yindjumaralidjinyin.*

We all always respect elders, male and
female, as well as Ngunnawal country itself.

Mura bidji mulangaridjindjula.

They always keep the pathways of their
ancestors alive.

Naraganawaliyiri yarabindjula.

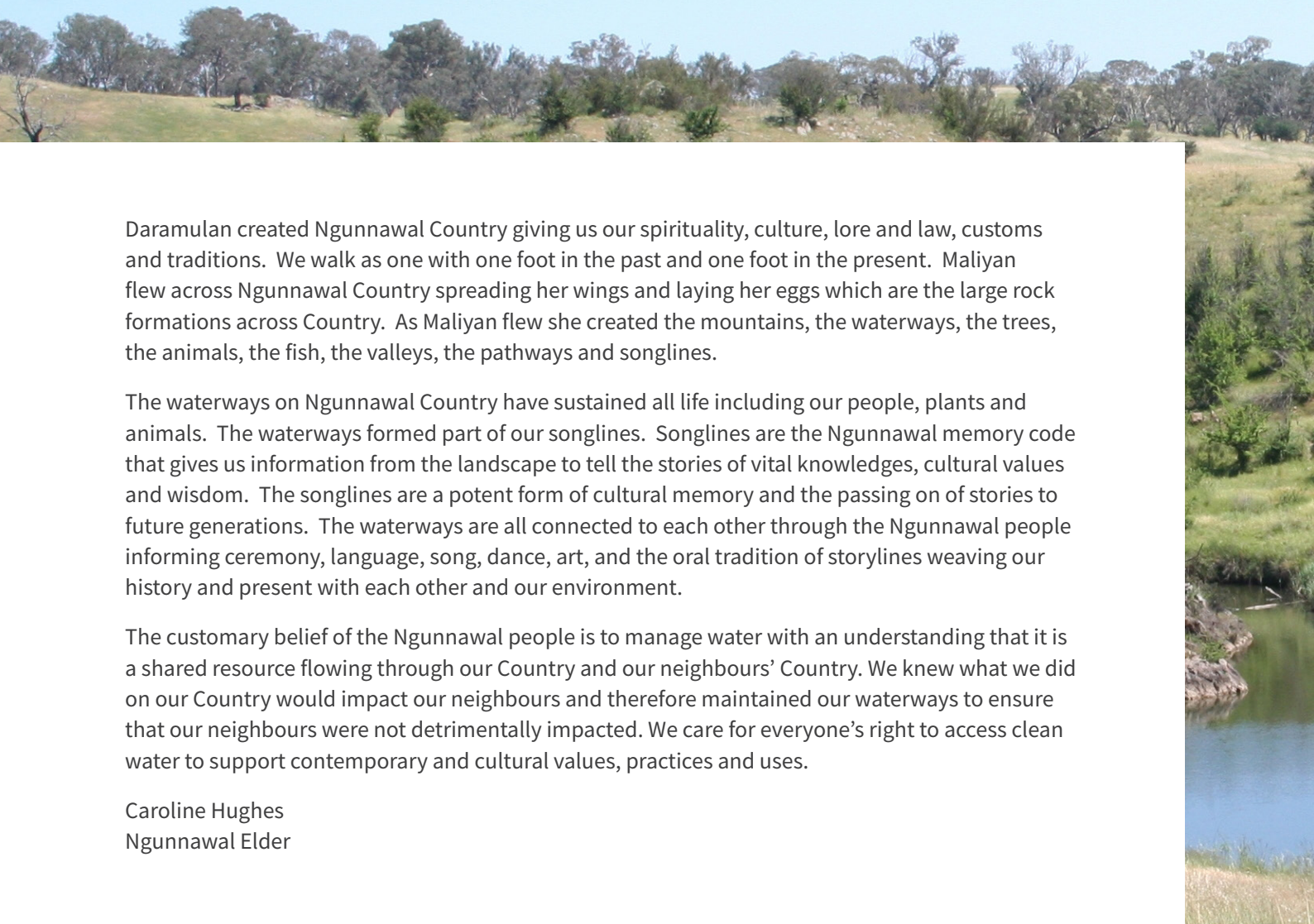
They walk together as one.

Daramulan created Ngunnawal Country giving us our spirituality, culture, lore and law, customs and traditions. We walk as one with one foot in the past and one foot in the present. Maliyan flew across Ngunnawal Country spreading her wings and laying her eggs which are the large rock formations across Country. As Maliyan flew she created the mountains, the waterways, the trees, the animals, the fish, the valleys, the pathways and songlines.

The waterways on Ngunnawal Country have sustained all life including our people, plants and animals. The waterways formed part of our songlines. Songlines are the Ngunnawal memory code that gives us information from the landscape to tell the stories of vital knowledges, cultural values and wisdom. The songlines are a potent form of cultural memory and the passing on of stories to future generations. The waterways are all connected to each other through the Ngunnawal people informing ceremony, language, song, dance, art, and the oral tradition of storylines weaving our history and present with each other and our environment.

The customary belief of the Ngunnawal people is to manage water with an understanding that it is a shared resource flowing through our Country and our neighbours' Country. We knew what we did on our Country would impact our neighbours and therefore maintained our waterways to ensure that our neighbours were not detrimentally impacted. We care for everyone's right to access clean water to support contemporary and cultural values, practices and uses.

Caroline Hughes
Ngunnawal Elder



Acknowledgment of Country by the ACT Government

The ACT Government acknowledges that Canberra is located on Ngunnawal Country and the special relationship and connection that the Ngunnawal people have with the land as its first inhabitants and Traditional Custodians. The ACT Government acknowledges the historic dispossession of the Ngunnawal people of Canberra and its surrounding regions. We recognise the significant contribution the Ngunnawal people have made to the ACT and region. For tens of thousands of years, the Ngunnawal people have maintained a tangible and intangible cultural, social, environmental, spiritual, and economic connection to these lands and waters. The ACT Government also

acknowledges the many other Aboriginal and Torres Strait Islander people from across Australia who have made Canberra their home, and we pay respect and celebrate their culture, diversity and contributions to the ACT and surrounding region.

The ACT understands the need for recognition of Ngunnawal Traditional Custodian knowledge and cultural values in natural resource management associated with the ACT. The ACT Government acknowledges that engaging Ngunnawal people in water planning and cultural flows will provide beneficial outcomes that support their cultural rights and practices on Ngunnawal Country.



Supporting holistic water management through good governance

Foundational Activity

Provide a holistic and coordinated approach to policy and program delivery

The three outcomes of the Strategy are 1. Healthy catchments and waterbodies, 2. A sustainable water supply used efficiently, and 3. A community that values and enjoys clean, healthy catchments and waterways.

Achieving these three outcomes requires having appropriate governance arrangements in place that provide a holistic and coordinated approach to managing water. Good governance is central to ensuring our water resources, waterways and lakes are managed to achieve the best outcomes for water customers, the community and the environment. Approaching water management holistically will also ensure we can respond to emerging pressures such as climate change and increased population as more people decide to call the ACT and region home.

Within the ACT, water is currently managed through shared responsibility across multiple agencies: policy and planning, program delivery, asset operation and maintenance, water supply, compliance and regulation.

For improved water quality and catchment health in the ACT and region, it is important that clear catchment management arrangements are in place that integrate water and land management and are supported by the community, experts and business, and incorporate best-practice principles for water governance.

The Organisation for Economic Co-operation and Development (OECD) has developed a set of 12 principles for water governance, which will be used by the ACT Government as it further refines its water policy framework. The themes of the principles are summarised in Figure 1.

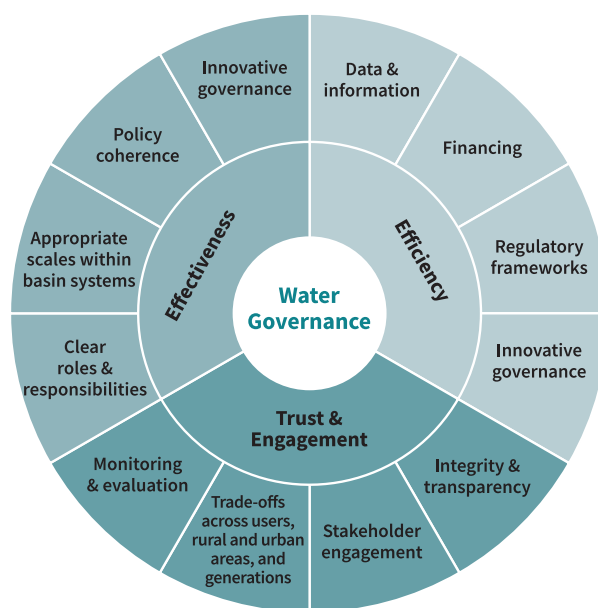


Figure 1. OECD Water Governance Principles

The OECD asserts that when it comes to water governance:

‘Policy responses to water challenges will only be viable if they are coherent and integrated; if stakeholders are properly engaged; if well-designed regulatory frameworks are in place; if there is adequate and accessible information; and if there is sufficient capacity, integrity, and transparency.’
 (OECD 2018 [Water Governance Indicator Framework](#))

Key activities conducted during 2020-21 to support this foundational activity:

- Engagement on the National Water Initiative and reforms— Environment, Planning and Sustainable Development Directorate (EPSDD)
- Engagement on the implementation of the Murray–Darling Basin Plan—EPSDD
- In 2021, the ACT Government, through the EPSDD, initiated a review of existing governance arrangements for water management within the ACT. This project is being led by the EPSDD in collaboration with other agencies and through consultation with stakeholders. The outcome of this review will be used to inform whether improvements are required to current arrangements. The project is in its preliminary stage and expected to conclude in the second half of 2021.

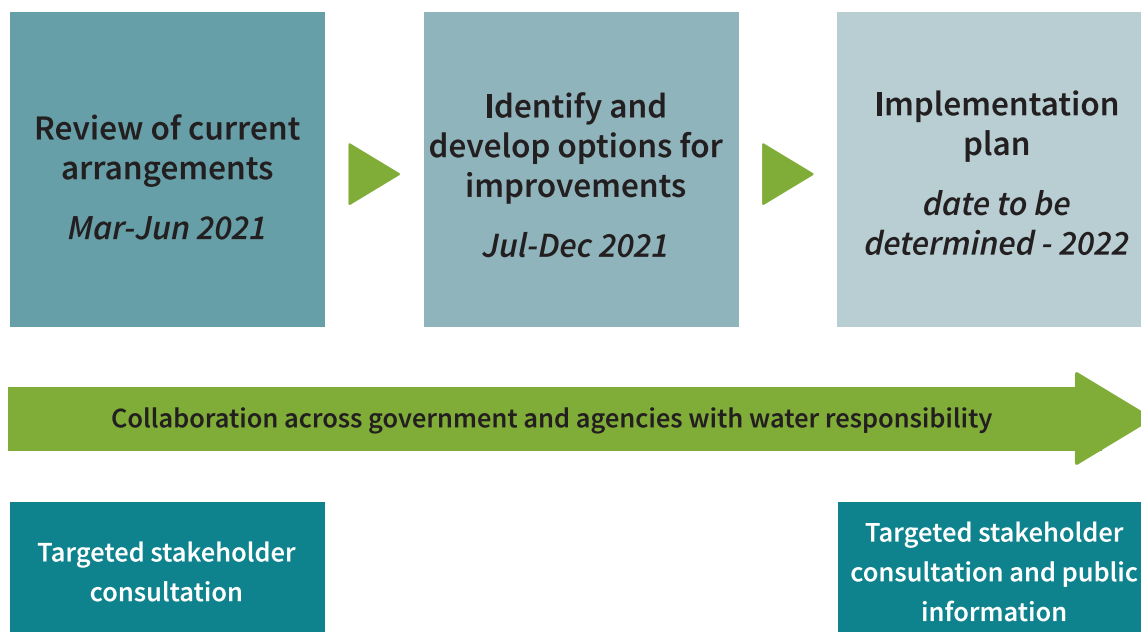


Figure 2. Governance review process

Supporting references:

- ACT Water Resource Plan for Surface and Groundwater (MDBA, Dec. 2019)
- *Water Resources Act 2007* (ACT)



Aerial shot of the Cotter Reservoir



Outcome 1: Healthy catchments and waterbodies

Well managed, functioning catchments that provide sufficient clean water for the environment and human consumption, support healthy waterbodies, and contribute to liveability of the ACT community.

Target: The ACT will maintain or improve the quality of water across all sub-catchments within the ACT (30-year target)

✓ On track towards this target

Interim target: A measurable improvement in catchment health (10-year target)

Strategy	Indicator (summary)
Strategy 1: Achieve integrated catchment management across the ACT and region	a. Water quality monitoring indicates the health of select river reaches are maintained or improved.
Strategy 2: Protect and restore aquatic ecosystems in urban and non-urban areas	b. There is a reduction in the intensity and volume of stormwater flows in urban creeks.
Strategy 3: Manage stormwater and flooding	c. Stream flows in regulated water supply catchments are managed in accordance with ACT Environmental Flow Guidelines.
	d. Stream flows in natural and modified ecosystems are managed in accordance with ACT Environmental Flow Guidelines.

Key activities conducted during 2020-21 to support Outcome 1:

→ The ACT’s \$93.5 million Healthy Waterways Program has delivered 20 infrastructure assets including wetlands, raingardens, gross pollution traps, waterway restoration, and half a million plants for filtering the water. These assets are designed to improve water quality by preventing nutrients, sediments and pollutants entering waterways and removing nutrients by establishing habitats for water-loving reeds, grasses and trees which use the nutrients to grow. In 2021, floating wetlands were installed in Lake Tuggeranong as a trial to reduce nutrients.



Curtin Rain Gardens by Healthy Waterways

- The health of the ACT's waterways continued to be measured by a broad range of monitoring programs:
 - » Pollutant loads were calculated using data on environmental flows collected through the hydrometric network (comprising 56 stations), coupled with water quality data on pollutant concentration collected under the Lakes and Rivers Water Quality Monitoring program.
 - » The Lake and Rivers Water Quality Monitoring Program recorded water quality data from 21 sites.
 - » The AUSRIVAS monitoring program recorded the biological health (macroinvertebrates) of waterways across 13 sites.
 - » The Waterwatch program produced the CHIP report, which is based on 1872 water quality surveys, 184 water bug surveys and 219 riparian assessments collected by more than 200 Waterwatch volunteers.



Waterwatch volunteers launch the 2020 CHIP report with Minister Shane Rattenbury MLA on World Water Day, 2021

- Environmental flows assist in the maintenance of water quality throughout the ACT catchments and are managed under licence conditions held by Icon Water. All environmental flows from the Corin, Bendora, Cotter and Googong reservoirs were achieved and, in cases, exceeded for 2019–20 (reporting for 2020–21 was not available at the time of publishing this Report Card).
- Improvements in streamflow and hydrodynamic modelling of water quality is being undertaken by the EPSDD to assess nutrient loads and the impacts of point source pollutants for Lake Burley Griffin. Information received from these modelling investigations will improve the assessment of pollutants entering the waterway and inform future policy and planning.
- Icon Water's 'Actions for Clean Water' report provide a commentary on the ACT drinking water catchments and prioritise erosion hotspots for attention. This monitoring has identified several sites as posing a risk to water quality and provides guidance on prioritising investment in stabilisation and remediation activities.
- Through their Murrumbidgee Ecological Monitoring Program, Icon Water conducts monitoring to ensure water abstraction from the Murrumbidgee River remains ecologically sustainable. Monitoring during 2019–20 showed abstraction did not result in the deterioration of ecological communities.
- Extensive rehabilitation and associated effectiveness monitoring of endangered High Country Bogs and Associated Fens has been carried out after almost all sites in the ACT burnt in the Orroral wildfire. Over 120 leaky weirs have been installed at 8 prioritised sites to reduce and prevent erosion and incision, increase peat wetness and promote revegetation. Almost 250 shade cloths have been installed at 9 sites to increase survival and growth of *Sphagnum* moss. Ongoing monitoring will assess their effectiveness and whether improvements can be made to better restore the endangered communities over time.

Stormwater management

- The ongoing operation and maintenance of infrastructure delivered through programs such as Healthy Waterways is critical for maintaining progress towards the Strategy's targets. The Transport Canberra and City Services Directorate (TCCS) has delivered a series of key projects during the year, supported by Australian Government funding, to enhance the effectiveness of assets such as the gross pollutant traps. These activities include:
 - » conducted an audit of gross pollutant traps to identify improvements that can be made to enhance performance and reduce operational costs
 - » doubled the level of service delivered for street sweeping by introducing two shifts per day, aiming to reduce the volume of organic matter entering the stormwater network (point source pollution management)
 - » additional cleaning of gross pollutant traps and the underground stormwater pipe network to reduce organic matter entering the stormwater network
 - » removed silt from sediment control ponds, enabling the ponds to continue to achieve a water quality protection function
 - » restored cut-off drains located at the base of mountains, ridges and hills, thereby assisting to reduce nuisance flooding during storm events and extended wet periods.
- Several high intensity rainfall events during 2020–21 resulted in TCCS responding to an unusually large number of nuisance flooding requests for service.

Key activities in focus for 2021–22:

- The EPSDD will continue the hydrometric, lakes and rivers and macroinvertebrate monitoring in 2021–22.
- The EPSDD will continue to carry out maintenance and monitoring of restoration works in endangered High Country Bogs and Associated Fens in 2021-22.
- Waterwatch has ongoing funds from the ACT Government to continue to support volunteers to collect water quality data and contribute to the better management of their waterways.
- Icon Water will conduct its next triennial catchment sanitary survey.

Supporting references:

- The ACT Environmental Flow Guidelines
- Licence to take water from the Cotter, Queanbeyan, and Murrumbidgee rivers for Icon Water
- Environmental Flows Annual Compliance Report by Icon Water
- Icon Water— [Murrumbidgee Ecological Monitoring Program](#)
- Icon Water— [Actions for Clean Water \(ACWA\) reports](#)
- The Catchment Health Indicator Program report ([CHIP 2020](#) report)



Shepherd's Hill sunset , taken by David Jenkins



Outcome 2: A sustainable water supply used efficiently

An integrated and efficient water supply system that provides for the optimal mix of supply options, encourages efficient use of water, is resilient to climate variability, and supports the social, economic and environmental needs of the ACT community.

Outcome 2: A sustainable water supply used efficiently		? Further information is required to assess progress
Target: Live within the Sustainable Diversion Limits set in the ACT (30-year target)		
Strategy	Indicator (summary)	
Strategy 4: Plan long-term water supplies	a. There is a 25% reduction in mains water usage per capita by 2023.	
Strategy 5: Manage and promote water services efficiently and sustainably	b. There is a 40% reduction in mains water usage in new developments, extensions and refurbishments under the Water Sensitive Urban Design code. c. Permanent water conservation measures are maintained and additional measures are investigated.	

Key activities conducted during 2020–21 to support Outcome 2:

- The ACT has been progressing discussions on water trading with NSW, the Murray–Darling Basin Authority and the Australian Government Department of Agriculture, Water and the Environment. The establishment of water trading will provide the ACT with a mechanism to access additional water under the Basin Plan’s Sustainable Diversion Limit, supporting our responsiveness to climate variability and population growth.
- The ESPDD has been working across government and with industry to identify a package of potential water efficiency measures that could improve water security by reducing urban water demand and water abstraction. This has been a significant body of work over several years funded through the Commonwealth’s Water Efficiency Program, under the Murray-Darling Basin Plan.

Icon Water’s Drought Management Plan

- Icon Water developed a Drought Management Plan in response to worsening drought conditions in 2019–20. The plan aims to strengthen the Territory’s preparedness for future drought conditions. It has been designed to be adaptive depending on the severity, timing and duration of future drought events by drawing on three management levers: source water management, demand and supply options.
- The Drought Management Plan continues to evolve as Icon Water pursues a deeper understanding of potential supply options and demand measures. Selecting the most appropriate portfolio of options will require further stakeholder and community engagement.

Care for Water Campaign

- 'Care for Water' is an Icon Water awareness campaign to inform our community on wise water use and to encourage the ACT region community to think about their water use and efforts to save water where they can.
- Icon Water engages the community through an array of water information programs and educational resources that start at Kindergarten and Year 2. This whole-of-community approach helps build knowledge around sustainable water use which benefit the ACT's long-term water security and water quality.



Icon Water delivers a digital education session to Fraser Primary School September 2020

- The 'Care for Water' campaign has been well received by the Canberra community with Icon Water's website attracting record numbers of visitors and traffic across water conservation webpages and growing by 900%. Water conservation posts shared across Icon Water's social media platforms reached more than 39,000 people and stories about saving water and water security increased substantially across both traditional and digital media outlets.
- The Icon Water community survey also showed a significant increase in Canberrans awareness of the rules currently in place for using water; from 49% in December 2019 to 67% in March 2020.

Permanent Water Conservation Measures

- There were no water restrictions imposed throughout 2020–2021. Permanent Water Conservation Measures continue to apply to save water for the Territory. These common sense measures allow the community to continue to save water for the future and use water efficiently.

Non-Potable Water Review

- In 2021, the Government initiated a review into water costs for high-intensity users of non-potable water. The review is considering all aspects of non-potable water pricing, with a final report to be completed in 2021 for Government consideration. A discussion paper was publicly released in March 2021 seeking public feedback.

Water Sensitive Urban Design

- The EPSDD is working with relevant agencies to improve the application of the Water Sensitive Urban Design (WSUD) General Code to developments across the Territory. Investigations to identify new options for incorporating into WSUD is ongoing, particularly to reduce mains water use in new developments.



Isabella Plains Rain Gardens, Jondol Place

Integrated water management

- Impervious surfaces throughout urban areas increase the volume of stormwater run-off. The EPSDD conducted preliminary analysis during the year to assess the additional volume of stormwater water run-off that could be associated with urban development since 2009. Further analysis will be required; however, this work aims to improve the integration of urban stormwater run-off into water resource management in the ACT.

Key activities in focus for 2021–22:

- The EPSDD will work across government and with Icon Water to identify options to improve the implementation of WSUD and explore solutions to enable improved monitoring, evaluation and reporting on new measures.
- Icon Water will work towards the release of version 2 of the Drought Management Plan and an assessment tool outlining adaptive pathways for supply portfolios.



Taylor preschool visits the Kambah pond as part of the H2OK program.



Outcome 3: A community that values and enjoys clean, healthy catchments and waterways

Safe, clean water means that the community will be able to undertake water-based or water dependent recreational activities without concerns for their health from coming in-to contact with contaminated water. This also means that riparian and aquatic ecosystems are provided with safe, clean water which allows these ecosystems and associated biodiversity to be healthy and resilient.

Target: Increased community understanding and participation in managing and improving waterways on the ACT (30-year target)

✓ On track towards this target

Interim target: The ACT's community's awareness and understanding of waterways, their function, and why their protection is vital has increased (5-year target)

Strategy	Indicator (summary)
Strategy 6: Provide clean and safe water for the ACT	a. There is an increase in community participation in activities to manage and monitor waterway health.
Strategy 7: Engage the community on understanding and contributing to a more sustainable city	b. Community initiated activities to improve catchment health have increased.
	c. Changes in community behaviour and associated activities that impact on water quality are observed.
	d. Education campaigns are delivered that support community engagement and awareness with the aim of improving water quality, domestic water demand management, and waterway function and protection.
	e. The cultural water values and uses of our Traditional Custodians is recognised in water management and planning. [New]

Key activities conducted during 2020-21 to support Outcome 3:

→ Through the Waterwatch program, volunteers help collect data for the Catchment Health Indicator Program report, with more than 200 volunteers conducting regular water quality monitoring at 230 Waterwatch sites across the ACT region. A total of 1872 water quality surveys, 184 waterbug surveys and 219 riparian condition surveys were carried out. This was a particularly significant achievement in 2020, when every volunteer returned to lend their time to this shared goal despite the challenges posed by the COVID-19 lockdown.



Waterwatch volunteers water sampling

- Waterwatch volunteers also contributed to Platypus surveys in Platypus Month, which saw more than 300 volunteers surveying across eight ‘river reach sites’ across the ACT region. This strongest ever turnout shows the increasing interest and support from the community in the ACT and surrounding NSW region in understanding how Platypus use our waterways.
- The Upper Murrumbidgee Demonstration Reach (UMDR) partnership continued to facilitate community involvement in activities to improve fish habitat and river health in the upper Murrumbidgee. Key partners include Bush Heritage Australia, the Australian River Restoration Centre, Upper Murrumbidgee Waterwatch, the ACT Government, the NSW Government, the University of Canberra and the Murray-Darling Basin Authority. In June 2021 a ‘fish and flows’ workshop acknowledged collaborative efforts to recover native fish and discussed the importance of managing water to provide adequate river flows for native fish in the upper Murrumbidgee River.



Dr Lisa Evans of the ACT Government Conservation Research Unit carries out fish survey at Scottsdale Reserve as part of the Upper Murrumbidgee Demonstration Reach project (taken by Annette Ruzicka)

- Icon Water developed a first ‘REFLECT’ Reconciliation Action Plan to support and build cultural awareness across the organisation, recognising and valuing the strong cultural connection that the Traditional Custodians have had, and continue to have, with our region’s waterways and catchments.
- Icon Water engaged 2,572 people through 71 events such as their digital education sessions, tours around Cotter and Googong dams, in-class presentations and professional learnings which build community literacy around the ACT urban water cycle, sewage and drain care.
- Community-led initiatives funded through the ACT Environment Grants program looked at restoring riparian habitats, including:
 - » weed control along Emu Creek to rehabilitate the terrestrial and aquatic ecosystems (Emu Creek Landcare Group)
 - » land rehabilitation/erosion control along Reedy Creek to reverse degradation from grazing and stabilise drainage with the aim to restore Reedy Creek to a stable chain of ponds (Molonglo Conservation Group)
 - » woody weed control along Ginninderra Creek (Ginninderra Catchment Group).
- The Leaf Collective, an ACT Government-funded community–government partnership, was conducted with Griffith University to test different ways to encourage residents to transform autumn leaf litter from a source of stormwater nutrient pollution into a valuable resource.

- Through the H2OK program, Molonglo Conservation Group ran a public art competition promoting H2OK messages.



Artwork at a newly established wetland in Kingston - the winning entry in Molonglo Conservation Group's art competition designed to engage and educate the community on the issue of stormwater quality.

- Three ACT catchment groups were funded to: increase community stewardship of urban waterways; improve community 'stormwater literacy'; reduce stormwater pollution and encourage behaviour change; and increase community resilience and nature connection.
- The EPSDD and Icon Water facilitated an Aboriginal Waterways Assessment in December 2020 with members of the Ngunnawal community, helping Traditional Custodians to assess the cultural health of their Country. Information from the waterway assessments is increasingly being used to inform water resource planning (for example, the ACT Water Resource Plan 2020), policy and program delivery.



Aboriginal Waterways Assessment with the Ngunnawal community at London Bridge, December 2020.

- The ACT Parks and Conservation Service worked with volunteers from the National Parks Association and several volunteer scientists who helped with the restoration of Snowy Flat and Jack's Flat bogs after they burnt in the 2020 Orrol wildfire. The volunteers installed around 50 shade cloths to increase survival and growth of *Sphagnum* moss, a key component of the endangered community.

Key activities in focus for 2021–22:

- The EPSDD has committed to employing an Indigenous Water Policy Officer in 2021 to help support incorporation of Indigenous perspectives into water policy and planning.
- The Waterwatch program is a successful citizen science program which has significant community support and provides vital water quality monitoring information. The program continues to encourage and support volunteers to collect water quality data and contribute to the better management of our waterways.
- Under the ACT Environment Grants Program, several local community groups received grants to undertake works in 2021–22 to help manage the health of waterways and catchments, including:
 - » revegetation along the Murrumbidgee and Gudgenby rivers to improve riparian zone habitat, biodiversity and riverbank stability riparian restoration (Outward Bound and Southern ACT Catchment Group)
 - » Molonglo riverbank woody weed regrowth control (Molonglo Conservation Group)
 - » improving turtle habitat for turtles nesting in the city (Ginninderra Catchment Group).
- The ACT Natural Resource Management (NRM) group, under its Drought Resilience Program, received Australian Government funding to build landholder capacity to manage water resources in the Naas Valley. ACT NRM will work in partnership with the ACT Rural Landholders Association, Naas Valley farmers, the ACT Government, the Australian River Restoration Centre, Landcare and citizen scientists to help establish drought refuges on ACT farms through riparian management and farm dam restoration.
- The leaf litter program, in partnership with the community, will begin to co-design a behaviour change strategy for managing Eucalyptus leaf litter. This will address the specific barriers and benefits of Eucalyptus leaf litter, which require different management approaches to deciduous autumn leaves.

Supporting references:

- The Catchment Health Indicator Program report ([CHIP 2020 report](#)) www.act.waterwatch.org.au/data/chip-reports
- www.act.waterwatch.org.au/education
- leafcollective.com.au
- [Icon Water Business Strategy 2020-21 to 2023-24](#)

