

# Catchment Protection Work Program

2024



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# Introduction

Our vision is:

**A healthy catchment that can continue to deliver safe, clean water through world-class source water protection and shared responsibility across the community.**

The *Australian Drinking Water Quality Guidelines* recognise that source water protection is an essential part of the multi-barrier approach to providing drinking water.

Source water protection is also firmly established in the regulatory framework governing Sydney's drinking water catchment<sup>1</sup>. WaterNSW is legislatively required "to protect and enhance the quality and quantity of water in declared catchment areas" under the *WaterNSW Act 2014*.

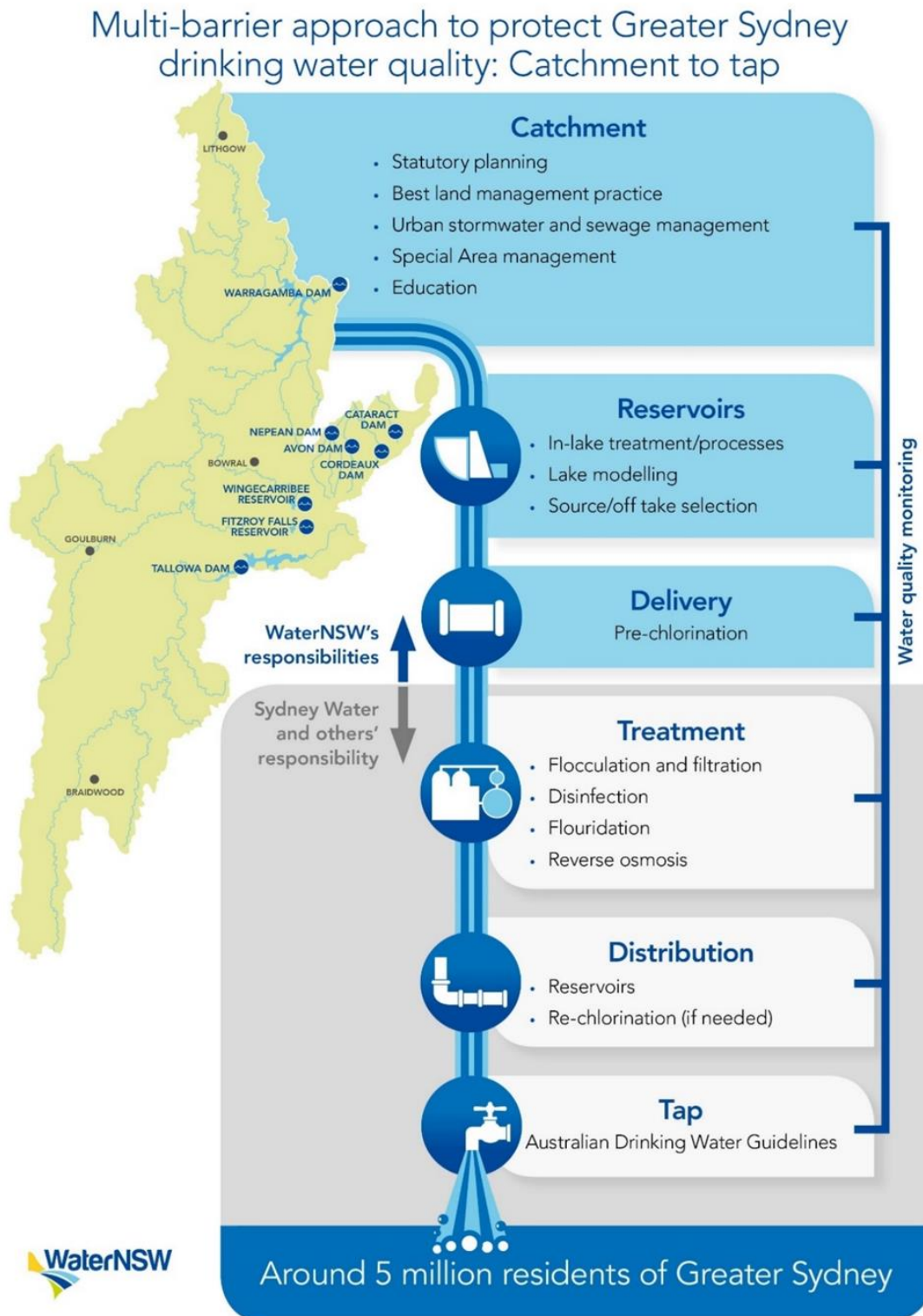
The Source Water Protection Strategy sets the vision, the priorities, and the goals for source water protection in Sydney's drinking water catchment over the next 20 years. These will be delivered through annual programs of work outlined in the Catchment Protection Work Program. The included activities and outcomes in the Catchment Protection Work Program 2023-2024 have been arranged around the priorities for source water protection outlined in the strategy.

Priority	Goal
<b>1. Scientific Approach</b>	Undertake scientific research into water quality risks and emerging issues in the catchment
<b>2. Creating water sensitive towns</b>	Improve the urban water practices of 5 major councils to a 'water sensitive city' score of 70%
<b>3. Ensuring water quality compatible development</b>	Contemporary standards and practices that ensure new development has a neutral or beneficial effect on water quality
<b>4. Integrating water quality policy and practice</b>	Planning instruments, supporting practices, and guidelines align with water quality and supply infrastructure protection
<b>5. Increasing regenerative agriculture</b>	1000 landholders managing healthy waterways and regenerative grazing practices
<b>6. Fulfilling land management responsibilities</b>	Maintain the long-term ecological values of the Special Areas consistent with water quality protection
<b>7. Enforcing catchment protection laws</b>	Maintain an active presence and use strategic intelligence to mitigate illegal and unauthorised actions

The program also identifies where actions are addressing recommendations of Catchment Audits, Operating Licence Audits, or research and monitoring.

The program fulfils WaterNSW's responsibilities for water quality protection and management and the results of the program are reported in the Annual Catchment Management Report, published on the WaterNSW website.

**Figure 1** shows the relationship between WaterNSW activities that help manage water quality risk.



**Figure 1: Relationship between water quality and risk**

# 1. Scientific approach

WaterNSW collects a wide range of scientific and spatial information to undertake risk assessments and investigations, increase understanding and insight about pollutants and their behaviour, improve monitoring and analysis, and prioritise actions to promote catchment health and water quality. The Science Program is an adaptable program of research that is aligned with business priorities and objectives, comprising of long term and short-term projects tackling complex research questions. Ongoing development of new projects that addresses business needs and take advantage of collaborative opportunities is critical to providing an agile program. We work with the customers, water industry, government agencies, research partners, and the community, to ensure that we use the best scientific evidence available. The current 2021-2025 Science Program focuses on priority research themes of catchment resilience and integrated water management.

## Planned Outcomes

- WaterNSW is a recognised for excellence in key areas of science impacting on its core business, aligned with the 2021-2025 Science Program priorities
- WaterNSW has participated in research partnerships that provide access to new science that may impact on its business, and incorporated relevant learnings to improve business outcomes
- WaterNSW has strong, evidence-based science to support the positions it takes on land management practices and regarding existing and proposed mining developments in the declared catchment

## Activities

### 1.1. Strategy and Communication

The research undertaken as part of the science program is only successful when it is adopted by the business or communicated properly to customers and stakeholders who need the knowledge generated by the research. As such, working with customers and stakeholders, industry leaders and research experts ensures that the outcomes of the science program are relevant to business and avail the business of the best available science and expertise to develop sound evidence-based improvements in water quality and catchment management. Extensive customer consultation, good peer relationships within industry and collaborative research engagement are the foundations of success.

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### Planned Activities

- Engage and consult with internal stakeholders, industry peers, professional bodies and research providers to keep abreast of the latest scientific advancements that could provide valuable business improvements at WaterNSW.
  - Represent WaterNSW at conferences and events, presenting scientific research outcomes from the WaterNSW science program.
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- Engage and consult with internal and external stakeholders to identify opportunities to align research with ongoing strategic planning (Source Water Protection Strategy, Climate adaptation strategy, Water quality objectives, Greater Sydney Water Strategy).
  - Maintain transparency and strategic alignment of the evolving research portfolio by developing and evaluating delivery strategic roadmaps for priority program goals.
  - Implement WaterNSW student research scholarships to support catchment health research and training of next generation of scientists.
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## 1.2. Catchment Resilience

The science program theme of catchment resilience focuses on scientific research towards the following outcomes:

- Review and develop WaterNSW specific catchment health indicators, to understand how the catchment is changing under different climatic and anthropogenic pressures (CR1)
  - Catchment health future state, to identify top risks (that meet a threshold for action) to catchment health due to changing climate and anthropogenic pressures (CR2)
  - Develop an understanding of the impacts of wildfire on water quality and what is effective fire remediation to protect water quality (CR3)
  - Understand the impacts of extended drought on catchment health and water quality (CR4)
  - Understand the impacts of mining on catchment health and water quality (CR5)
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### Planned Activities

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- Apply updated tools and metrics to assess and communicate catchment health status to support catchment planning and management.
  - Identify risks, opportunities and strategic planning needs arising from potential future scenarios of climate and anthropogenic changes to the Sydney Drinking Water Catchment.
  - Commence investigation of causes of poor water quality at priority sites identified in the Sydney Drinking Water Catchment Audit 2019-2022<sup>ii</sup>.
  - Continue to improve our capability to quantify the relative water quality risk from different landscape fuel attributes and fire management practices.
  - Review the modelling decisions and update generalised methodology to detect trends in stream flow using probabilistic approaches.
  - Continue monitoring and assessing available data to develop/refine water balance model for Swamps 7, 14 and Leech to assess the impacts of mining on swamps (WRL).
  - Continue to analyse the indicator datasets for mining pressure and develop a summary report for the catchment outlook report.
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### 1.3. Integrated Water Management

The science program theme of integrated water management focuses on scientific research towards the following outcomes:

- Understand the relationship between lake ecology and water quality and the impact of supply security strategies (IWM1)
- Develop and improve inputs required for the WaterNSW Water Quality model, supporting decision making and reducing uncertainty (IWM2)
- Improved understanding of cyanobacteria bloom formation and strain dominance to increase ability to predict blooms (CY1)
- Improve the efficiency of cyanobacteria monitoring (CY2)

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#### Planned Activities

- Continue development of an integrated water quality model to quantify the source water influences on reservoir and supply water quality under changing conditions and current operating conditions.
- Finalise quantitative microbial risk assessment modelling best practice guidelines and contribute towards an industry pilot application, through an Australia-wide collaborative process (WaterRA).
- Continue field and laboratory studies to understand ecological interactions between lake water quality, macrophytes and cyanobacteria in Lake Prospect (UTS).
- Continue to investigate the types of planktonic species responsible for unusual taste and odour issues in lakes and the chemicals they produce and develop a chemical analysis screening test beyond geosmin and MIB. Two PhD students at UNSW through a WaterNSW/Sydney Water WaterRA scholarship. Additionally review the historic behaviour of planktonic derived taste and odour events.
- Review the performance of fDOM fluorescent sensors as a surrogate for DOC within Nepean reservoir and make recommendations on optimising for operational decision making.
- Continue to work with RMIT on the project; augmenting water bodies with highly treated recycled water to develop guidance for assessing environmental thresholds and a framework of management for recycled water discharges into the environment (WaterRA).
- Undertake a desktop data analysis to assess the long-term impacts on water quality from existing interbasin transfers from the Shoalhaven system into the declared catchment.
- Develop a guidance manual for the use of cyanobacteria toxin gene assay. A literature review addressing gene testing, guide for incorporation in bloom management, and a cost-benefit analysis of major cyanotoxin gene testing methods. A criteria-based matrix will be developed to compare difference technologies and rank them accordingly. (WaterRA)

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- Develop a satellite remote sensing approach for calibration of the WaterNSW hydrodynamic water quality model. This includes a literature review for applying remotely sensed data in water quality models, algorithms for estimating total suspended solids, coloured dissolved organic matter and chlorophyll-a from remotely sensed data, a method to calibrate the Integrated Water Quality model, focusing on water temperature and then applying it to chlorophyll-a data. (UNSW/WaterRA)
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#### 1.4. Science Advice

The expertise within the science program can get drawn upon for advice and support for operational activities, monitoring and evaluation support, incident response, and addressing audit recommendations. Areas of advice include mining impacts, drought impacts on aquatic organisms, monitoring and evaluation of interventions, special monitoring methodology during water quality events, advice on emerging contaminants, investigation and review to address audit recommendations, and supporting fire, heavy rainfall, and contaminant event response.

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##### Planned Activities

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- Provide ad hoc advice and investigations to support the business to make management decisions and assess catchment health and water quality impacts in response to events and operational needs
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#### 1.5. Risks and Opportunities

Along with the core research themes of catchment resilience and integrated water management, the science program is responsive to emerging risks and business improvement opportunities that new research and technology advancement provides. WaterNSW scans for risks and opportunities, and undertakes scientific research that identifies emerging technologies, management techniques, and mitigation options for these potential risks to catchment health and water quality. Horizon scanning is a function of the science program. Emerging risks and new technologies are investigated and where relevant scientific research is undertaken to ensure WaterNSW has the best available science to assess new risks and can take advantage of innovative methods for managing catchment health and water quality.

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##### Planned Activities

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- Validate gut-on-a-chip detection and infectivity assays for *Cryptosporidium* and adenovirus (ARC - Murdoch University).
  - A literature review on the capability of satellite remote sensing to monitor water quality and catchment health as a component of the SRS Project.
  - Continue to collaborate with water industry peers on the newly formed Cooperative Research Centre for Solving Antimicrobial Resistance in Agribusiness, Food, and Environments.
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- Continue to increase data science capability within WaterNSW and develop data science solutions for water management through calibration with our partners from the Industrial Transformation and Training Centre for Data Analytics and Environment.
- 
- Investigate opportunities for greenhouse gas emission quantification and mitigation within water storage reservoir.
- 
- Investigate solar powered aeration to improve water quality and reduce cold water pollution
- 
- Collaborate on the cyanotoxin update by food crops project, comprising (1) a comprehensive review of scientific literature to determine current understanding of the issue (2) testing of cyanobacterial toxins in food crops and soils irrigated by recycled water containing cyanotoxin from South Australia and potentially interstate sites. (WaterRA)
- 
- Conduct a hydrocarbon monitoring trial in collaboration with Sydney Water to determine best technology for critical control monitoring of contaminant risk.
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## 2. Creating water sensitive towns

### Issues

Over 125,000 people live in urban areas in the Sydney catchment area. Risk analysis studies have identified that the highest loads of pollutants come from the largest urban centres located across five local government areas.

### Goal

Improve the urban water practices of the five major local councils to a 'water sensitive city' score of 70%.

### Planned Outcomes

- Priority councils in the declared catchments have improved their water sensitivity ratings by 5 percent by 2024 (measured biannually).

### Activities

#### 2.1. Catchment Program - Urban

After heavy and intense rainfall, runoff can wash pollutants from industrial and urban areas including overflowing Sewage Treatment Plants and septic tanks into storm water drains and waterways. The pollutants of most concern are phosphorus and nitrogen (from animal excreta and industrial, business, and residential waste), protozoan pathogens (in overflows of untreated sewage and malfunctioning on-site sewerage systems), and sediment (erosion of natural waterways from high velocity runoff).

WaterNSW is partnering with local government to identify sources of stormwater pollution in high-risk areas, to support and encourage councils to integrate water sensitive design into policy, and to co-fund the implementation of water sensitive projects in target areas.

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#### Planned Activities

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- Work in partnership with priority councils on collaborative water sensitive projects to improve management of urban areas with an emphasis on stormwater and sewage<sup>iii</sup>

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  - Support delivery and development of education programs to improve urban water literacy and celebrate implementation of water sensitive practices<sup>iv</sup>

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  - Collaborate with priority councils to audit, map and collect data on existing stormwater systems and assets which can be used to investigate sources of pollution, and improve treatment and management practices<sup>v</sup>

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  - Strategic and business planning for program delivery in 2024-2028

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## **Supporting Data**

The WaterNSW Rapid Water Sensitive Cities (WSC) Benchmarking Tool will be applied biannually to benchmark the progress of each of the councils.

## 3. Ensuring water quality compatible development

### Issues

New residential, commercial, and industrial developments can potentially impact water quality in local waterways and groundwater if not designed and managed to contemporary standards and practices.

### Goal

Contemporary standards and practices that ensure new development has a neutral or beneficial effect on water quality.

### Planned Outcomes

- Councils in the declared catchments improve their use of the Neutral or Beneficial Effect (NorBE) tool
- Developments and activities that potentially impact on controlled areas implement WaterNSW conditions
- WaterNSW advocacy regarding potential risks to our values (water quantity, water quality and ecological impacts) has influenced decisions and consent conditions on mining developments in the declared catchment

### Activities

#### 3.1. Assessments - Catchment

Consent authorities (local councils, planning panels and the Minister for Planning and Public Spaces and their delegates) cannot approve development unless satisfied the development would have a neutral or beneficial effect on water quality.

The Biodiversity and Conservation SEPP 2021 states that development consent must not be granted to development on land in the Sydney Drinking Water Catchment unless the consent authority is satisfied the development is consistent with the NorBE Guideline. The NorBE Guideline in turn requires that all proposed development and activities should incorporate WaterNSW's current recommended practices or equivalents. In April 2023 there are 36 practices addressing a range of land uses and phases including stormwater and wastewater management.

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#### Planned Activities

- 
- Support councils with development assessment tools and guidelines including the Neutral or Beneficial Effect Tool
  - Audit council use of the NorBE tool and institute actions to improve compliance with requirements<sup>vi</sup>
  - Provide advice to proponents, councils and determining authorities on high risk and state significant developments to ensure WaterNSW interests are protected
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### 3.2. Assessments - Mining

WaterNSW has no legal powers to control or stop mining in the declared catchments. However, as the partial owner and joint manager of the Special Areas we seek to influence the planning decisions and hold the subsequent mining operations to account for all impacts which significantly harm our values (principally water quantity, water quality and ecological integrity). We perform this role by providing advice to regulators, agencies and mining companies.

WaterNSW's Mining Principles underpin WaterNSW's decision making in relation to managing mining impacts in the declared Sydney catchment area and on catchment infrastructure.

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#### Planned Activities

- Advocate WaterNSW's mining principles in relevant written advice and submissions
- Provide advice to the Department of Planning and Environment on water monitoring methods for mining in the Special Areas to reflect best practice and up-to-date scientific knowledge
- Develop a database to collate mining data in the declared catchment

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#### Supporting Data

1. Percentage of DAs using the NorBE online assessment tool
2. Percentage of DAs completed correctly in the NorBE online assessment tool
3. Percentage of DAs complying with conditions of consent

## 4. Integrating water quality policy and practice

### Issues

The health of a drinking water catchment is dependent on the condition of the land and the management practices used on that land. Poor land use and development practices and standards can contribute to a range of contaminants and degradation that impact water quality.

### Goal

Planning instruments, supporting practices, and guidelines align with water quality and supply infrastructure protection.

### Planned Outcomes

- Partnerships agreed with at least 5 councils to address source water protection issues

### Activities

#### 4.1. Policy - Catchments

WaterNSW works with the Department of Planning and Environment and local councils with responsibilities under the *Environmental Planning and Assessment Act, 1979* to provide advice on policy and environmental planning instruments. This guidance ensures that the plans, policies and frameworks guiding new developments and activities have specific provisions to maintain and protect the drinking water catchments and water supply infrastructure.

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#### Planned Activities

- Advise local councils on rezoning proposals, planning proposals, local growth strategies, rural land strategies and housing strategies, and Development Control Plans/Local Environment Plans
- Influence the Department of Planning and Environment (DPE) to seek to improve the regulation of developments in the vicinity of the Upper Canal and Warragamba Pipelines
- Hold regular meetings with councils:
  - assessing development applications adjacent to Controlled Areas and key WaterNSW infrastructure
  - developing strategic planning documents affecting the declared catchments and controlled areas
- Influence DPE on key changes to planning law, policies, planning instruments, regional growth plans and tools that affect the catchments and water infrastructure
- Work with Sydney Water and the Department of Health to give effect to the Joint Policy - Recreational Access to Water Supply Storages, Special and Controlled Areas in the Sydney Catchment

### Supporting Data

1. Number of formal partnerships between councils and WaterNSW to address source water protection issues
2. Extent of statutory planning and policy documents that contain positive improvements for water quality protection

## 5. Increasing regenerative agriculture

### Issues

Agricultural land use stretches across 38% of Sydney's drinking water catchments. And there is a direct relationship between the health of the landscape, management practices, and the quality of water in rivers and reservoirs.

Past agricultural practices have contributed to extensive and long-term degradation over the last 100 years. Stock access to waterways and continuous grazing have led to vegetation decline and accelerated erosion. Resilience to droughts and floods has been diminished and waterways are vulnerable to climate extremes. The agricultural landscape is the largest source of sediment, nutrients, and pathogens in the Sydney catchments.

Many individuals, groups, and organisations (government and not-for-profit) are endeavouring to turn degradation around and need support. Regenerative agriculture is a term increasingly used to describe a collective of practices that supports healthy, productive agriculture and a healthy environment.

### Goal

1000 landholders managing healthy waterways and regenerative grazing practices

### Planned Outcome

Long term trends of phosphorus, nitrogen, pathogens, and sediment have a downward trajectory. To achieve this, our Rural Program is looking for evidence of landowners fencing and excluding stock from waterways, increasing riparian vegetation in protected areas to improve biofiltration, treating significant erosion, and integrating rotational grazing practice into their broader land use.

### Activities and outcomes

#### 5.1. Rural Program

WaterNSW partners with Local Land Services (LLS) and the Australian River Restoration Centre (ARRC) to work with graziers, managers, and landholders. The partnership drives change by supporting landholders to improve farming practices, landscape and waterway conditions, and water quality in creeks and rivers.

Regenerative farming embraces a wide spectrum of practices and outcomes that support water quality, builds resilience at a local and sub-catchment scale, and demonstrates compatible aims between farming and environmental outcomes.

Our partnerships focus on increasing diverse riparian vegetation, managing uncontrolled stock access to waterways, treating gully and streambank erosion, and implementing sustainable grazing practices. It also includes activities to upgrade dairy effluent management to industry best practice.

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## Planned Activities

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- Collaborate with Local Land Services to deliver the Rural Landscape Program (RLP) and the Australian River Restoration Centre for delivery of the Rivers of Carbon – Source Water Linkages program<sup>vii, viii</sup>
  - Support landholders to:
    - Fence the exclusion of stock from waterways and riparian buffers to support recovery and on-ground action,
    - Build, repair, and conserve natural and functional waterway conditions important to the local setting including hydrologic connections, vegetation structure and biodiversity, and gully, bank, and channel stability, and
    - Introduce and manage rotational grazing practices adjacent to riparian land that supports improve soil conditions and groundcover.
  - Undertake workshops, field days and events, social media, and other communication activities to engage with landholders about waterway rehabilitation and sustainable grazing
  - Monitor and conclude contracted dairy projects to upgrade effluent management systems
  - Strategic and business planning for Rural Program delivery in 2024-2028
  - Evaluation and improvement activities including the continuation of the strategic evaluation of the RLP and integration of recommendations, and refinement of the WaterNSW Rural Program goals, objectives, and metrics
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## Supporting Data

- Number of graziers implementing new waterway and grazing practices
- Riparian length with controlled or excluded stock access
- Ha of riparian area revegetated or regenerated



## 6. Fulfilling land management responsibilities

### Issues

WaterNSW has various land management responsibilities across Sydney's drinking water catchment, including the Special Areas, public recreation areas and a range of leased or licensed land. Fulfilling these responsibilities demands both high level strategic planning and complex daily operations, with an underlying focus on the ongoing protection of water quality. The key risks to water quality are from bushfire, pests and weeds, and erosion, particularly within the Special Areas, which surround the reservoirs.

### Goal

Maintain the long-term ecological values of the Special Areas consistent with water quality protection.

### Planned Outcomes

- Fire management has minimised risks to life and property, critical infrastructure, water quality and ecological integrity
- Biosecurity has been managed to minimise, prevent and eliminate risks to water quality and supply and ecological integrity
- Recreation Areas are managed to provide public facilities sympathetic to their location and to protect water quality and natural values.

### Activities

#### 6.1. Fire Management

Fire mitigation and suppression works are implemented to minimise the impacts of wildfire on WaterNSW land, assets, and water quality. This includes representation on key district bushfire management committees, hazard reduction burns, mechanical asset protection zones, early detection (fire towers) and fire suppression crews.

Wildfire in the Special Areas can reduce vegetation coverage and increase the risk of sediment, ash and debris being transport into streams and lakes. Periodically major fires have been experienced in the bushland areas surrounding reservoirs in the Sydney Catchment Area. Large fires occurred in the Warragamba and Shoalhaven Catchments in 2019/20 and recovery work continues to repair assets and minimise ongoing risk.

Fire risk is increasing under a changing climate, and rapid-fire response is a critical management tool to reduce the likelihood of catastrophic impacts from fires spreading.

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### Planned Activities

- Collaborate with RFS and NPWS to ensure tenure neutral approach to fire management including active participation at Bush Fire Management Committees
  - Conduct 10 priority hazard reduction burns hazard reducing at least 4,000 ha
  - Implement hazard reduction program including maintaining fire breaks (380 km / 550 ha)
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- Maintenance of 180 kms of fire trails
- 
- Implement Bushfire Management Plans for Sydney Catchment Area lands and maintain data sources that drive these plans
- 
- Maintain early detection and rapid response capability and preparedness in accordance with the Bushfire Operational Protocol
- 
- Suppress wildfire outbreaks within target guideline (matrix dependent on the fire danger rating index) with at least 80% of fires contained to less than 10 ha
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## 6.2. Biosecurity

Landowners have a duty to manage pests and weeds (general biosecurity duty). WaterNSW works with the NPWS, local government, Local Land Services, Regional Pest and Weed Committees, and landholders to control priority pests and weeds with best practices.

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### Planned Activities

- 
- Control priority vertebrate pests including pigs, rabbits, dogs, deer, goats, horses, cattle and foxes in Special Areas and Braidwood lands in accordance with LLS Regional Pest Plans
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- Control priority weeds including aquatic weeds in Prospect Reservoir and Lake Yarrunga, willow and blackberry in Wingecarribee Swamp (20 ha) and Warragamba, regional priority weeds in Braidwood,
- 
- Actively participate in the Greater Sydney, Central Tablelands and South East LLS Regional Weed and Pest Committees
- 
- Develop an aquatic weed risk assessment process and biosecurity plan template to improve prioritisation of pest and weed control effort
- 
- Continue to implement the research program to determine patterns of deer movement in Metropolitan Special Area
- 
- Continue research on assessments of the extent and density of priority pest and weed species in the Special Areas focussing on pigs in Warragamba
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### 6.3. Recreation Areas Management

Every year over 600,000 people visit national park reserves and recreation areas at dams, reservoirs, and rivers in the Sydney and Shoalhaven regions. Recreation areas are highly valued by the community. The NSW government has a social responsibility to provide a safe, clean, and welcoming environment for visitors to enjoy the dams, camping areas, and surrounds.

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#### Planned Activities

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- Implement inspection program to maintain public safety and inform maintenance activities
  - Maintain recreational assets to provide amenable and safe facilities for the public, and where applicable in accordance with Conservation Management Plans
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### 6.4. Supporting Activities

There is a network of unsealed roads throughout the Special Areas. This network is important for fire management including suppression and for safe access to key infrastructure. Upgrades, repairs, and maintenance of the network is aligned with construction guidelines and achieves standards required under the Rural Fires Act 1997, helps prevent erosion, and meets the safe operational needs of all users.

Barriers, fences, and gates are required to provide a safe space and protect people, the environment and assets. They also deter unlawful intrusion into restricted areas.

There are many natural, historic, and indigenous heritage places throughout the Special Areas and broader Sydney Catchment Area. WaterNSW works with landholders, the community, local and state government, and indigenous land councils and representatives to identify, protect, and manage the values of heritage owned and operated by WaterNSW or found on WaterNSW land.

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#### Planned Activities

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- Implement inspection program of 400 km unsealed roads and carry out repair and upgrade of prioritised works on trails and drainage features
  - Continue to repair trails damaged during flood events during 2021 and 2022
  - Treat 2 priority erosion sites within the Declared Catchment
  - Install and maintain barriers, fences and signs with a focus on where unauthorised access is causing environmental damage
  - Progressively update Special Area enforcement signs
  - Maintain and protect significant heritage items
  - Support programs to monitor and protect ecological communities
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- Consult and support traditional owners of the Special Areas
- 
- Develop an erosion management decision support tool for the Special Areas<sup>ix</sup>.
- 
- Implement the Special Areas Strategic Plan of Management with NPWS
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### **Supporting Data**

1. Range and density of priority pests and weeds
2. Asset condition profile for fire trails and fire blocks (slash breaks plus HR blocks) are consistent with desired condition
3. Number of wildfires that exceed 10 ha annually

## 7. Enforcing catchment protection laws

### Issues

WaterNSW has responsibilities under the *Water NSW Act 2014*, the *Water NSW Regulation 2020* and the *Protection of the Environment Operations Act 1997* to protect water quality in the Sydney Catchment Area, including the Special Areas. Illegal and unauthorised activities can compromise the integrity of the Special Areas and the broader catchment area and threaten water quality and management objectives.

### Goal

Maintain an active presence and use strategic intelligence to mitigate illegal and unauthorised actions.

### Planned Outcomes

- Access to Special and Controlled Areas is consistent with the Regulation and our authorised access policy

### Activities

#### 7.1. Compliance

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#### Planned Activities

- 
- Deliver education campaign targeting high risk groups and activities in local government areas impacting on the catchments, to members of the community relating to the importance of protecting Special or Controlled Areas
- 
- Social media education campaign targeting high risk groups in Local Government Areas impacting on the catchment, encouraging the local community's support<sup>x</sup>
- 
- Assess and determine access consent applications and grant consent with appropriate conditions, or document clear reasons for refusal<sup>xi</sup>
- 
- Audit 10% of access consents granted for compliance with conditions
- 
- Conduct targeted compliance operations with interagency partners
- 
- Conduct 1,500 hours of Special Area and Controlled Area surveillance<sup>xii</sup>
- 
- Ensure Electronic Surveillance (Trail Cameras) are installed within identified Hot Spots for a period greater than 250 days per year
- 
- Conduct targeted operations to specifically aim at irregular issues as they arise
- 
- Undertake regular inspections and interactions with councils bordering Special and Controlled areas to ensure compliance with development consent conditions
- 
- Investigate reports of activities contravening the *Water NSW Act 2014* and *Regulation 2020* and the water quality provisions of the *Protection of the Environment Enforcement Act 1997* in the declared catchment<sup>xiii</sup>
- 
- 90% of PINS are finalised through Revenue NSW or Court based enforcement<sup>xiv</sup>
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## **Supporting Data**

1. Number of warning letters and infringement notices issued in the Special Areas
2. Number of current Special Areas access consents
3. Number of investigations completed in the declared catchment
4. Number of POEO Act notices issued

## 8. Educating and engaging communities

### Issues

WaterNSW is required to undertake an educative role within the community under the *Water NSW Act 2014* and the *WaterNSW Operating Licence*. WaterNSW works and engages with residents and landholders, community organisations, schools, businesses, local councils, and government to support the long-term management of drinking water.

We use a range of communication and education tools including the Visitor Centre at Warragamba Dam, website, publications and media articles, targeted community education programs, community engagement and interpretation structures at our dams and recreation areas. The Warragamba Dam excursion program offers primary, secondary and tertiary students from across the catchment and Sydney area the chance to explore all aspects of modern water supply, and to learn about water through hands-on activities in the onsite Visitor Centre. The primary and secondary program is linked to the requirements of the NSW syllabus for the National Curriculum, with supporting education resources for teachers and students online.

### Goal

Undertake an educative role in the community on WaterNSW activities and functions in the Sydney Catchment area.

### Planned Outcomes

- Surveyed participants have an increased knowledge and understanding of the role of WaterNSW, catchment management and risks to water quality and quantity in the Declared Catchment
- Communities are informed about WaterNSW projects and potential impacts

### Activities

#### 8.1 Community and School Education

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##### Planned Activities

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- Deliver the Warragamba Dam school excursion program to around 3,500 students
  - Host approximately 80,000 visitors at the Warragamba Dam Visitor Centre
  - Deliver temporary exhibitions and supporting activities at the Warragamba Dam Visitor Centre
  - Develop and support community education programs in the Declared Catchment
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#### 8.2 Community Engagement

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##### Planned Activities

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- WaterNSW will engage with local communities on projects and activities that impact them
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## 9. Budget

### 9.1. Operational Budget

Project Name	Budget (\$'000)
Scientific Approach	2,051
Creating water sensitive towns	998
Ensuring water quality compatible development	1,641
Integrating water quality policy and practice	598
Increasing regenerative agriculture	1,851
Fulfilling land management responsibilities	13,417
Enforcing catchment protection laws	944
Education and engaging communities	1,355
<b>Total</b>	<b>23,156</b>

### 9.2. Capital Budget

Project Name	Budget (\$'000)
Catchment infrastructure asset renewals	446
Catchment Upgrade and Replacement of Plant and Equipment	850
Fencing – Declared Catchment	566
Water Quality Modelling	2,160
Roads and trails	305
<b>Total</b>	<b>4,327</b>

**Note 1:** Budgets exclude overheads

**Note 2:** Scientific approach budget incorporates budgets for the science program as well as the integrated water model project



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<sup>i</sup> Source water protection in the Sydney Declared Catchment is governed and directed by our responsibilities under the Water NSW Act (s. 6(1)(c), 7(1)(g), (h) and (j), and 47(2)), SEPP 2011 (Sydney Drinking Water Catchment SEPP), the Australian Drinking Water Quality Guidelines 2011, and requirements of NSW Health.

<sup>ii</sup> Included in response to Recommendation 22 of the 2022 Catchment Audit.

<sup>iii</sup> Included in response to recommendations 19 (assisting priority Councils to carry out audits of stormwater quality improvement devices (SQIDs) 21 (embedding the Get the Site Right (GTSR) program into the Urban Program with priority councils) of the 2022 Catchment Audit.

<sup>iv</sup> Responding to Recommendation 23 of the 2022 Catchment Audit by assisting Blue Mountains Council to promote excellence in stormwater management practices.

<sup>v</sup> Included to gather data required to respond to Recommendation 19 of the 2022 Catchment Audit

<sup>vi</sup> Included in response to Recommendation 19 of the 2022 Catchment audit

<sup>vii</sup> Included in response to Recommendation 8 of the 2022 Catchment Audit.

<sup>viii</sup> This program will include selective monitoring of erosion control works using drone and Lidar technologies in response to Recommendation 16 of the 2022 Catchment Audit.

<sup>ix</sup> Included in response to Recommendation 15 of the 2022 Catchment Audit.

<sup>x</sup> Budget for education program incorporated into 8.1 Community Education

<sup>xi</sup> Includes processing outstanding applications carried forward from FY23

<sup>xii</sup> Hours spent on joint agency operations by partner agencies are excluded from this figure

<sup>xiii</sup> Includes closing out investigations still active at the end of FY23.

<sup>xiv</sup> Fines may not be paid however, Revenue NSW will utilise other tactics such as licence or registration cancelation until the person pays, or payment plans and this can be an extended process.