Australian Capital Territory

Nature Conservation (July 2024 – June 2026) Biodiversity Research and Monitoring Program 2025*

Notifiable instrument NI2025-9

made under the

Nature Conservation Act 2014, s 25 (Biodiversity research and monitoring program—conservator to prepare)

---

1 Name of instrument

This instrument is the *Nature Conservation (July 2024 – June 2026) Biodiversity Research and Monitoring Program 2025*.

2 Commencement

This instrument commences on the day after notification.

3 Biodiversity research and monitoring program

I have prepared the biodiversity research and monitoring program for the period 1 July 2024 to 30 June 2026 as set out in schedule 1 to this instrument.

Rachael De Hosson
A/g Conservator of Flora and Fauna

19 December 2024

*Name amended under Legislation Act, s 60

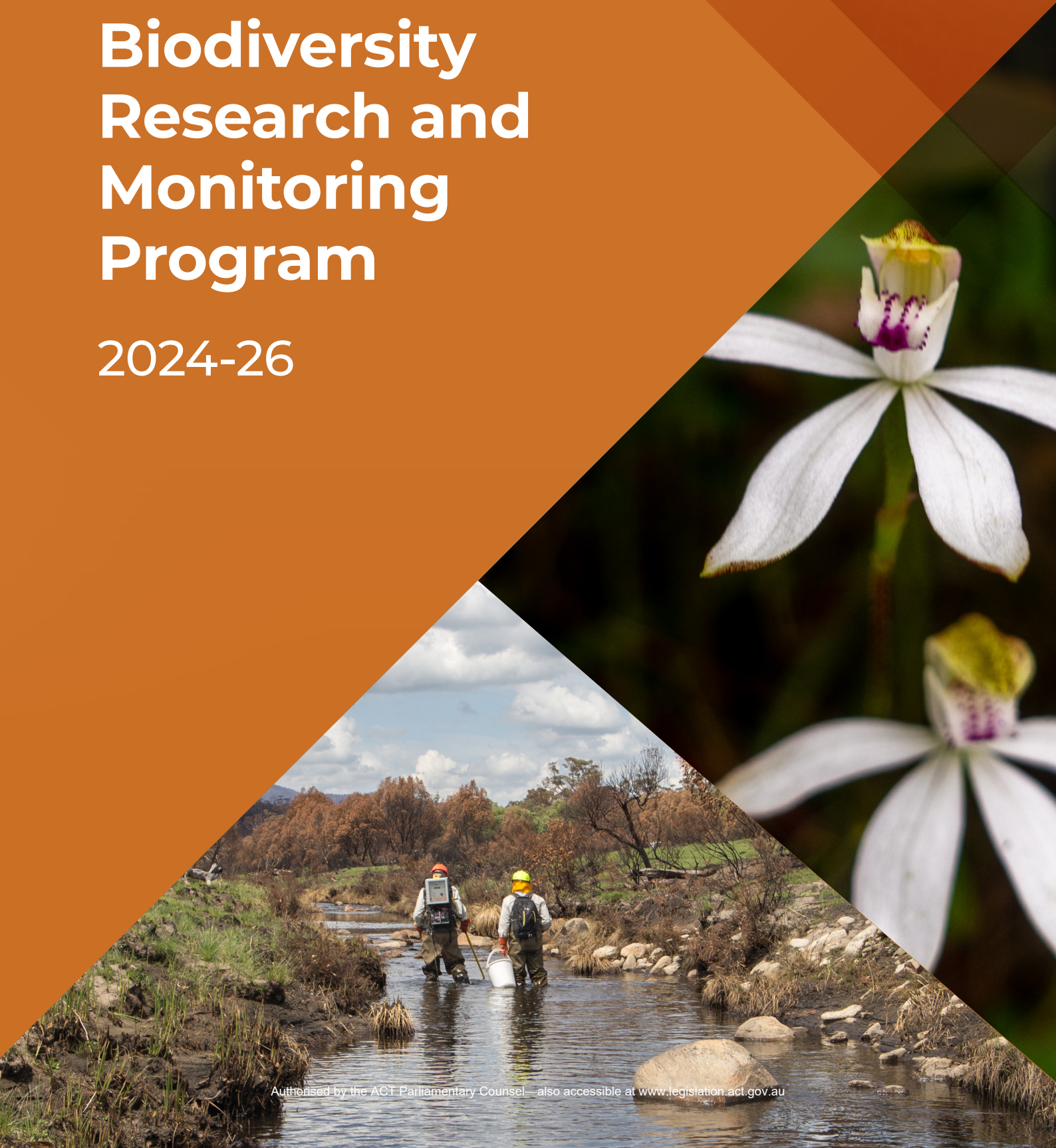
SCHEDULE 1

(see section 3)

ACT Government

Biodiversity Research and Monitoring Program

2024-26



Yuma Dhawura nguna ngurumbangu gunanggu Ngunnawal.
Nginggada dindi dhawura Ngunnawalbun yindjumaralidjinyin.
Mura bidji mulanggaridjindjula.
Naraganawaliyiri yarabindjula.

This is Ngunnawal, ancestral homeland.
We all always respect elders, male and female, as well as Ngunnawal country itself.
They always keep the pathways of their ancestors alive.
They walk together as one.

We wish to acknowledge the Ngunnawal people as traditional custodians of the land and waters of the ACT and region, we also recognise any other people or families with connection to the lands of the ACT and region. We wish to acknowledge and respect their continuing culture and the contribution they make to the life of this city and this region.

This program is in effect for the period 1 July 2024 to 30 June 2026.

Table of Contents

List of Acronyms

ACT	Australian Capital Territory
ANU	Australian National University
ARC	Australian Research Council
CEMP	Conservation Effectiveness Monitoring Program
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DA	Development application
EGK	Eastern Grey Kangaroo
EIS	Environmental impact statement
EHP	Environment Heritage and Parks
EPBC	Environment Protection and Biodiversity Conservation (Act)
ESO	Environmental significance opinion
EPSDD	Environment Planning and Sustainable Development Directorate
KPI	Key performance indicator
LiDAR	Light Detection and Ranging
NARCLiM	NSW and Australian Regional Climate Modelling
NRM	Natural Resource Management team
NRMAC	Natural Resource Management Advisory Committee
ONC	Office of Nature Conservation
PCS	Parks and Conservation Service
RFS	Rural Fire Service
RSPCA	Royal Society for the Prevention of Cruelty to Animals
TCCS	Transport Canberra and City Services
TNR	Tidbinbilla Nature Reserve
UC	University of Canberra

Biodiversity Research and Monitoring Program (2024 – 26)

Introduction

The period of the Biodiversity Research and Monitoring Program (BRAMP) 2024-26 will see significant challenges for conserving nature in the ACT, but also brings new opportunities. As our climate rapidly changes, and our city expands, existing threats such as invasive species, urbanisation, fragmentation and habitat loss will increase. We will continue active management of values; much of this work is undertaken in partnership with key stakeholders such as universities, community groups, volunteers, rural landholders, industry and other government agencies. We will also develop and explore new tools, techniques and applications to strengthen conservation efforts, and shift to proactive restoration of priority areas. Our strategic environmental policy section continues to work to work closely with other jurisdictions and the Commonwealth to ensure that the ACT Government remains an active contributor to the Australian Government's '30 by 30' target, and that we identify and explore new formal mechanisms for biodiversity protection in areas outside conservation estate. All this work requires a sound scientific evidence base.

In 2024 we commenced the review of the *Nature Conservation Act 2014*, and the drafting of the new Nature Conservation Strategy. This legislative review and policy renewal brings great opportunities to ensure that our science is fit for purpose and embedded in strong adaptive management frameworks. Monitoring and research outcomes can then be used to evaluate the effectiveness of management action, and to inform future directions.

Within the Environment, Heritage and Parks Division (EHP) of EPSDD, we are establishing program functions to integrate planning, coordinate action and enabled transparent and collective decision making. This includes the formation of relevant steering committees, working groups or forums. Our work on bogs and fens, restoration and threatened species has embed monitoring and research into an adaptive management framework. Such governance structures boost our ability to work collaboratively and efficiently on science planning, monitoring, research and management.

Effective adaptive management relies on well-managed, accessible and robust data from both monitoring response and recording of management actions. The threat prioritisation tool and the 'RAPID' tool for tracking management interventions and restoration actions will continue to be improved. In addition, new 'robo advice' maps, values-based heat mapping, and mapping of priority areas for restoration in grassland and woodlands to help focus our work and communicate

conservation priorities are underway. Online data collection and assessment tools, such as the restoration wheel, will help monitor progress towards our conservation goals.

Building on the BRAMP 2022-24 actions, the use of ARCGIS online applications continues to ensure that we consistently store and collaboratively share biodiversity data, while dashboards allow for data visualisation, communication and reporting across both internal and external stakeholders. The move to such online applications will continue. The work on an ACT Biodiversity Data Repository, and the use of emerging technologies such as thermal drones, remote sensing and AI/machine learning for data processing is ongoing and expanding.

Embedding Ngunnawal community and culture into nature conservation is a high priority. Within this BRAMP, actions to enhance uptake of traditional science include developing a cultural burning partnership between the Ngunnawal community and EPSDD, seeking opportunities for 'two-way science' learning and sharing, supporting Ngunnawal assessment of 'Healthy Country' by co-developing monitoring tools, forming an EPSDD indigenous data sovereignty working group, and embedding Ngunnawal cultural advisors into priority programs such as restoration.

As Canberra continues to grow, the importance of maintaining our biodiversity across an ever-expanding city is an increasing challenge. The formulation of biodiversity sensitive urban design (BSUD) guidelines and identification of biodiversity hotspots as priority areas and key connectivity corridors throughout the urban matrix will help us focus our nature conservation efforts and maintain habitat critical to species survival into the future.

As part of the above, we will progress regional plant community type (PCT) mapping across the ACT and develop a strategic, prioritised, and landscape-scale map. The map will provide accurate baseline information to guide landscape scale conservation and restoration priorities. Our new restoration program will focus on undertaking action in priority areas within lowland woodland and grassland ecosystems, and targeted monitoring will track changes in ecological condition over time.

Climate change is increasing pressure on ecosystems and species, with changes to the world's biodiversity and landforms taking place at an alarming rate. The Climate Adaptation for Nature initiative continues to explore and promote adaptation responses, including identifying barriers and pathways to change. We will continue to facilitate access to NARCliM climate projections for the ACT region and promote their effective use for climate refugia identification and other applications.

With climate change comes an increasing risk of fire in our landscape. During this BRAMP, we will continue to build our understanding of the effects of prescribe burning and bushfires on subalpine

woodland vegetation structure and fauna assemblages and undertake monitoring of prescribed burns to evaluate environmental outcomes against objectives and provide adaptive management advice for burn planning and operations.

Additional threats, such as emerging diseases, have led to an increased focus on biosecurity. The H5N1 High pathogenicity avian influenza and associated preparedness activities, as well as managing existing wildlife diseases such chytrid fungus and sarcoptic mange, requires ongoing scientific input to inform and advise management action. Threatssuch as dieback have been predicted to increase with climate change, and multiple research projects focus on new ways to tackle these challenges.

We will develop and refine threatened species prioritisation mechanisms and progress strategic investment into species and ecosystems identified as in need of immediate action. Captive breeding, genetic rescues and translocations, plus ongoing monitoring and management of priority flora and fauna species will ensure that these species remain part of our broader biodiversity. We will continue with periodic effectiveness reviews to ensure our management actions are delivering against desired outcomes of threatened species and communities' Action Plans.

We will continue to improve understanding of the impacts of invasive species and overabundant native wildlife on natural values under a changing climate, to enable best-practice prioritisation and management response. Our Eastern Grey Kangaroo fertility control program continues its cutting-edge research to improve macropod management and reduce the potential impact of overgrazing on threatened species. Key actions within this BRAMP include conducting an invasive species prioritisation process, ongoing invasive herbivore management and raising the profile of high-impact threats on biodiversity, such as African Lovegrass. Research priorities include exploring the response of weed species to various management inputs and develop a stronger evidence base to inform management, undertaking predator (fox and feral cat) control trials and assessing the distribution of alien fish species and exploration of management options. The development of a spatial prioritization tool for weeds and herbage mass decision making provides land managers with targeted advice based on monitoring of vegetation, herbage mass and priority weeds in lowland areas of the ACT.

Finally, we seek to build capacity for improving the health of our aquatic and riparian environments. Key actions undertaken in this BRAMP include expanding social science research to understand and mitigate impacts of recreational angling on native fish populations, trialling the

construction of ‘fish hotels’ in the Cotter River to assist species recovery post fire, increasing knowledge of ACT macrophytes and boosting the condition of urban streams and riparian areas. Monitoring water quality in our rivers and urban lakes continues to track waterway condition and inform management decisions overtime, ensuring a future for both our biodiversity, and all Canberrans that rely on this vital resource.

Overview

The (BRAMP) supports the ACT Conservator of Flora and Fauna by setting out biodiversity research and monitoring priorities of the Environment, Planning and Sustainable Development Directorate (EPSDD) for a specified two-year period. The BRAMP is a notifiable instrument under the *Nature Conservation Act 2014*.

The BRAMP July 2024-June 2026 includes but goes beyond these requirements to articulate the delivery of actions under the EPSDD Science Plan 2020-2025 (The Science Plan). This includes research and monitoring not directly related to biodiversity, and additional activities captured in the Science Plan. The Science Plan aims to communicate the Environment, Heritage and Parks Division’s (EHP’s) science investment, research and monitoring priorities, and establishes the structure for a coordinated and strategic approach to identifying, funding and delivering monitoring and research projects. This framework maximises the relevance, cost-effectiveness and impact of our activities, and supports the use of robust scientific evidence to inform decision-making. The Science Plan identifies five key action areas (Part 2) and eleven research and monitoring themes (Part 3).

The BRAMP contributes to:

1. improved visibility of biodiversity monitoring and research undertaken by EPSDD,
2. better understanding and tracking of ecosystem condition,
3. an evidence base for environmental policy, program, and resource allocation,
4. identification of key knowledge gaps and priority research needs.

PART ONE: Action Areas

Action Area 1: Authoritative Science Advice

Being able to provide authoritative science advice, informing decision-making in both policy and management, is essential for scientific staff within EPSDD. The goals set out in the EPSDD Science Plan 2020-2025 ensure that staff remain experts in their field, providing robust advice and maintain ongoing collaborations and connections to the broader scientific community. It also promotes concrete linkages with end users, such as land managers, community groups and other practitioners to ensure that our science is fit for purpose and used to inform adaptive management that strives to achieve improved nature conservation outcomes.

1.1 Scientific staff are contemporary experts and provide reliable and timely advice.

Project	**Status**	**Actions 2024-2026**
Scientific staff across EPSDD provide advice on a range of topics to both internal and external audiences	Ongoing	• Provision of ecological or technical advice into development applications, environmental impact assessments and ESOs, strategic bushfire management plans and burn operational plans, threatened species and community recovery plans and policy, threat program management, urban forest implementation and open space management, forestry management and operations, restoration planning, land management agreements, fisheries and offsets management plans. • Advice to external stakeholders, institutions and organisations on species management, captive breeding programs and sanctuary management. • Technical advice into water resource policy and management, including design and evaluation of water sensitive urban design and water assessment programs. • Technical expertise and advice regarding future climate predictions, climate change resilience and adaptation science. • Provision of moderator service to online data collection applications, such as NatureMapr, to assist with biodiversity data validity. • Provision of condition assessment of ecosystems values to inform management decision-making. • Compliance enforcement. • Well-managed data to enhance the ability to provide reliable and responsive advice to Ministers, executive leadership, and broader Canberra community.

1.2 Scientific staff are supported to maintain professional expertise and continue professional development, through e.g. enabling their access to scientific literature, linkages with scientific institutions, participation in relevant scientific conferences, and receipt of relevant training.

Project	Status	Actions 2024-2026
Scientific staff across EPSDD train and laisse with professional organisations so that they remain experts in their field and maintain ongoing connections to the broader scientific community.	Ongoing	• Support and encourage staff to attend relevant conferences, workshops, targeted meetings, and access appropriate training, including access to cultural training. • Support staff to participate in interjurisdictional panels, community of practitioners, environmental reference groups, taskforces, working or advisory groups and recovery teams. • Support staff to collaborate with other professional institutions, government agencies, universities, and external experts to build on skillsets, access training opportunities, and to encourage staff to improve expertise while increasing professional networks. • Create pathways for scientific staff to be affiliated with primary research institutions and have this acknowledged as a positive, shared benefit. • Collaborate with research centres and advisory bodies to develop codes or guidelines for best practice as needed. • Maintain memberships in regional bodies and specialist societies. • Co-supervise postgraduate students that are undertaking applicable scientific research. • Undertake a review of the balance of technical expertise across different areas (e.g. social science, climate adaptation, threat management, heritage), identify and address gaps, and ensure there is access to expertise across science, planning, operational staff areas. • Collaborate across teams and branches to leverage shared knowledge and skills to inform on-ground action. • Encourage staff to seek support, training and learning opportunities through access to suitably experienced staff and data systems (e.g. NatureMapr, ecological databases). • Explore options to get access to scientific literature in more systematised way. • Supporting scientific staff to undertake further study such as Honours, Masters, or PhDs, as applicable to their position. • Hold events to enable development of relationships with research partners, including e.g. further symposia, workshops, and collaboration events such as the “Ideas Mingle” with the ANU/UC/CSIRO Centre for Biodiversity Analysis. • Continue to explore and initiate opportunities to facilitate information sharing and networking between internal teams, including planning, policy, research and monitoring, and management operations.

Action Area 2: Targeted, well-designed research and monitoring

Specific research and monitoring projects and programs are set out in Part Two. For our research and monitoring data to be of value, it must be targeted, fit for purpose and informative for management. The goals set out in the EPSDD Science Plan 2020-2025 strive for all monitoring programs to be scientifically robust, appropriate as to answer the needs of management, informative to internal evaluations to assess how we are delivering on outcomes specified in our plans and strategies, and to ensure we contribute to national databases and learnings.

2.1 All monitoring programs are scientifically robust, targeted, and efficient, and collect the most appropriate data to evaluate and guide management actions.

Project	**Status**	**Actions 2024-2026**
Designing fit for purpose and informative for management monitoring and research	Ongoing	• All monitoring and research activities have clearly defined objectives and address priority questions, needs and uncertainty for management, with clear implications for improving policy and decision making. • Existing monitoring is used effectively for planning, predictive modelling, and prioritisation of management activities, including restoration. • Research and ongoing monitoring guides strategic direction through robust evaluation of management efforts. • Promote opportunities to co-develop ideas for research and monitoring programs that provide clearer link between research and operations. • On-ground actions relating to research, monitoring or operational activities are captured within a spatialised planning and reporting systems that works cohesively across EPSDD. • Research and monitoring develop an evidence-base to inform post-disturbance management responses (e.g. post urbanisation or bushfires). • Develop a condition monitoring program that adopts traditional cultural knowledge indicators (e.g. fire, culturally significant species). • Establish a monitoring framework that informs status or condition of significant cultural sites or high conservation value areas to support appropriate and timely management response. • Water monitoring programs are designed to provide an evidence-base to inform water policy, planning and adaptive management. • Establish research and monitoring of urban tree loss, replacement rates and compliance, under the Urban Forest Act 2023, with an intent to review progress in 2026. • Appropriate statistical advice and/or expertise is available or drawn upon (see section 1) to ensure research projects and monitoring programs have experimental designs that are statistically robust to enable inference to be drawn from outcomes.

		• Establish an authorising and professional development environment to ensure that all research is targeted, focused on answering a specific management questions and needs, and is captured within the Science Directory.
2.2 Monitoring efforts are designed in ways that enable relevant research questions to be addressed, and existing monitoring datasets are used to address relevant research and management questions.		
Project	**Status**	**Actions 2024-2026**
Designing monitoring programs that can contribute to broader learnings, including national databases	Ongoing	• Build upon existing monitoring to enhance the opportunities for improving knowledge of relevance to policy and management decision making. • Continue to contribute environmental data into national databases and programs that aim to improve knowledge or enable research into ecosystems, ecological processes, threats and for aggregated data and to demonstrate success against national commitments. These include: o Terrestrial Ecosystem Research Network (TERN) o National Threatened Species Index (TSX) o Biodiversity Data Repository (BDR) o Sirex spp. Biosecurity and control o WINS database of invasive plants research and monitoring o New Established Weeds and Plants (NEWP) program o Wild Matters biocontrol prioritisation framework o CSIRO Digital systems for adaptive weed management work group • Use water monitoring data to calibrate water resource models to support policy and planning decision making in the water sector. • Continue to provide ecological monitoring data into internal indicator frameworks, such as Accountability Indicators, EPSDD Strategic Indicators, ACT Wellbeing Framework. • Use monitoring data to develop supporting tools for decision making, and for compliance reporting as required. • Ensure monitoring data can demonstrate that funded activities have been completed and successful in order to receive grant payments and improve success of budget bids. • Review current and future monitoring and consider whether and how we can incorporate data collection that is appropriate to track the impact of climate change. • Continue to develop an urban biodiversity, habitat, and connectivity monitoring program, to identify urban biodiversity hotspots, key connectivity corridors, track ecological condition change over time and to validate habitat and connectivity models, including using historic and landscape genomic data.

		• Improve the ability of management program data to directly inform research and evaluation of ecological outcomes.
2.3 Research is relevant, robust, subject to independent critical scrutiny, co-developed with user groups, and results wherever possible in peer-reviewed publication of research findings.		
Project	**Status**	**Actions 2024-2026**
Reviewing research and ensuring availability to end users	Ongoing	• Continue to support the publication of peer-reviewed scientific articles enabled through collaborative research partnerships with external research institutions (e.g. ARC Linkage Grant projects, research student projects). • Secure resources that allow for timely, robust data analysis and publication of research findings in peer-reviewed literature as to inform adaptive management. • Threatened species and ecological communities planning, monitoring, research, and reporting is independently reviewed by the Scientific Committee. • Insights from research are effectively communicated to and shared with stakeholders as to be incorporated in future planning and management. • Undertake further refinement of the Science Directory and develop good practice Science Planning guidance to promote these objectives. • Engage with the Biodiversity Conservation Forum (BCF) and Natural Resource Management Advisory Committee (NRMAC) forums for community and government to share ideas and to enable the provision of external advice into government programs. • Publications expected to be produced in the next 2 year include: Implications of application of fire for conserving grassland communities and associated fauna. Monitoring the long-term ecological effects of prescribed burning on dry forest communities in Canberra Nature Park. o Genetic rescue of Macquarie Perch and montane crayfish genetics. o Water quality in Lake Tuggeranong and Lake Burley Griffin (results of monitoring from 2017). o Impacts and post-fire recovery of fire-sensitive vegetation communities in Namadgi after the 2020 Orroral Valley Bushfire. o Long term vegetation structural dynamics in response to prescribed burning in dry sclerophyll forest, ACT. o Threatened species translocations: outcomes and best practice. o Little Eagle movements, breeding success and impacts of urbanisation. o Predicting Greater Glider distribution in Namadgi National Park. o Post fire recovery of the endangered Broad Toothed Rat in Namadgi National Park.

		○ Results and products of threatened species research are prepared for end users and publication. ○ Social values of water in the ACT ○ Outcomes of the ACT water vulnerability assessment. ○ Innovative methods of macropod population management, including fertility control ○ The effectiveness of an eastern grey kangaroo management program as an example of adaptive management in the ACT. ○ An evaluation of a feral deer management program in the ACT. ○ Use of supplementary habitat post fire to promote the recovery of reptiles, invertebrates, and small mammals. ○ Trialling remote delivery of Bravecto for treating mange in bare-nosed wombats. ○ Canberra Grassland Earless Dragon survival rates after hard and soft releases. ○ Habitat use by reintroduced Canberra Grassland Earless Dragons. ○ 'Smart burrow' development and use by Canberra Grassland Earless Dragons.
2.4 Citizen science collaborations are enhanced and strengthened.		
Project	**Status**	**Actions 2024-2026**
Enhancing Community collaborations	Ongoing	• Continue to engage the citizen science community to support ongoing research and monitoring programs, through: ○ NatureMapr (formerly Canberra Nature Map) ○ CUBs (Canberra Urban Biodiversity Surveys) ○ ParkCare (Patch, Ranger Assist streams, Friends of groups) ○ National Parks Associations ○ FrogWatch ○ WaterWatch ○ Post-fire Mountain Galaxias project ○ Macropod counts ○ Targeted threatened species monitoring ○ Long term monitoring of orchid diversity after prescribed burning at Mt Painter ○ Wombat population and mange prevalence monitoring program ○ Platypus and Rakali monitoring ○ TurtleSat turtle monitoring program ○ Tidbinbilla turtle monitoring program ○ Latham Snipe project

		○ eBird observation records ○ Gudgenby Bush Regenerators ○ Rosenberg Goanna project • Work with the Canberra Orchid Society to monitor key orchid populations and rare orchids, such as the Canberra Spider orchid. • Investigate opportunities to incorporate data collected through citizen science programs as to complement existing monitoring programs. • Strengthen relationships with citizen science through sharing of technical expertise, data collection applications and portals, and data analytics to improve value of citizen science data in informing restoration, management of threats, and distribution mapping of key values. • Provide clear, consistent advice to citizen science programs to improve useability and consistency of data and promote awareness of strategic priorities, such as guiding prioritised threatened community management and restoration, through shared spatial planning resources, resourcing, and training opportunities. • Support Canberra Nature Map to increase opportunities for citizen science input to government datasets, particularly around urban biodiversity monitoring, detecting species of interest and the identification of new and emerging threats. • Improved communication between citizen science and other targeted knowledge gathering programs and PCS depot staff to improve shared knowledge of ecological values (e.g. Gang Gang nest sites, Rosenberg's Goanna sightings). • Continue to build relationships with citizen scientist through the Woodlands & Wetlands Trust volunteer base to assist with operational activities (e.g. Turtle Patrol). • Maintain and support the work of the Wombat mange and monitoring working group. • Engage with citizen scientists to develop baseline knowledge database on the identification and condition of urban trees within the ACT. • Collaborate with community groups such as RSPCA on addressing the issue of wandering domestic cats. • Maintain communications with lobby groups such ACT Nature Conservation Council, Friends of Grasslands as to increase awareness of key issues. • Collaborate with urban Landcare groups and EPSDD Place Management team to undertake community planting activities within urban footprint. • Identify opportunities for knowledge sharing between EPSDD and rural landholders. • Use of Superb Parrot DigiVOL project to harness citizen sourced data.

		• Support Canberra Birds to enable technical expertise or reports to inform conservation advice and management action (e.g. fire management, exotic tree removal), particularly for declining woodland, wetland, and migratory species. • Fund relevant citizen science activities through environmental grants. • Encouraging citizens to report on illegal fishing activities. • Facilitate voluntary angler input of recreational fishing catch into the urban lakes fisheries dashboard. • Establish a community outreach program to improve awareness of activities and opportunities within local parks and reserves (e.g. conduct Open Day events for new suburbs). • Provide animals and information to promote awareness of threatened species and associated programs (e.g. Snakes Alive). • Undertake ranger guided activities and partake in educational videos to educate the general public about the environment. • Collaborate with interested parties to organise and coordinate events (e.g. guest speakers, libraries, guided walks) for significant dates, such as International Day of Forests and Tree Week community event. • Enable opportunities for student learning through targeted visits to facilities (e.g. TNR threatened species programs), student placements, work experience opportunities and internships. • Decision-making by Values Officers and burn planning is undertaken using best available knowledge of the location of ecological assets, including citizen science observations, such as sightings submitted through NatureMapr platform. • Create an EPSDD Volunteer Steering Committee as a contact point for community based environmental groups and volunteers, that can resolve issues and ensure cross government coordination. • Undertake engagement of different sectors within the community which are underrepresented in community environmental volunteering groups so that that these groups become more active in the environmental space.
2.5 Social science and economics expertise within the Division is increased and included in work that we do.		
Project	**Status**	**Actions 2024-2026**
Incorporating social science into biodiversity research and management	Ongoing	• Incorporate of qualitative data (e.g. multi-media, social and cultural values) into analysis and evaluation to inform decision making. • Investigate scope for assessing, monitoring, and reporting on recreational, aesthetic and/or economic benefits of forestry plantations to inform resource allocation or values-based management.

		• Undertake social engagement to improve understanding of community values, recreational needs and health benefits from reserves and open space to inform and guide management activities. Use land value to test community values of urban green space. • Progress securing staff with qualitative research expertise to better understand conservation stakeholder experience to inform management and policy. • Conduct a longitudinal study into the levels of climate resilience experiences by the Canberra community, including undertaking checkpoint surveys facilitated by the ACT Well Being survey. • Maintain ongoing collaborations with ANU to quantify the tangible co-benefits of actions that improve energy efficiency within the urban context (e.g. impacts on mental wellbeing). • Establish a communications program seeking to influence community behaviour and attitudes toward domestic fertiliser use and leaf disposal is informed by community values of waterways program (H2OK Program). • Incorporating social and economic analyses into upper Murrumbidgee River restoration program. • Conduct an opinion poll on the attitudes of ACT residents to kangaroos and their management. • Undertake an economic-social analysis of the value proposition of agriculture in the ACT. • Ensure social science advice is incorporated into trout management and angling in the Lower Cotter River. • Continue to undertake PCS visitor satisfaction surveys and collect visitor count data. • Continue to provide technical advice to update fisheries regulations, based on results of scientific monitoring and social expectations. • Continue to consider the impact of our programs, projects, and policies to the broader Canberra community through application of the ACT Wellbeing Framework. • Foster positive relationships with the Canberra community through use of compliance measures that protect our environment. Successful application is reflected through positive Visitor Satisfaction Survey results.
2.6 Ngunnawal people are widely consulted with and engaged in research and monitoring efforts, and understanding is increased of how Ngunnawal cultural knowledge and practices can contribute to achieving EPSDD's conservation and management priorities, and how integrating Ngunnawal cultural knowledge and practices with formal scientific knowledge and practices can generate fresh understanding to advise and guide management.		
Project	**Status**	**Actions 2024-2026**
Improving Ngunnawal engagement and partnerships	Ongoing	• Commit to the principles of Traditional Owner Intellectual Property, including investigating avenues to enable indigenous data sovereignty by embedding the FAIR and CARE principles for data management. • Develop an understanding of shared cultural and conservation goals, including around cultural resource use, and seek to improve two-way science opportunities.

		• Conduct yarning circles with Ngunnawal community about management of culturally important species (e.g. kangaroos), processes (e.g. fire), and resources (e.g. water) to embed Ngunnawal input into management plans. • Complete the drafting of the Cultural Resource management Plan, incorporating consultation with the broader Ngunnawal community, by end of 2024. • Ensure the integration of Ngunnawal values, vision and cultural management actions into strategic policy and planning, such as Reserve Plans of Management, ecosystem plans and strategies, threatened species and community planning, and the new Nature Conservation Strategy, ensuring consistency and clarity between policies and plans. • Embed Ngunnawal language within EPSDD communications, plans, policy, and programs (e.g. presentations, maps, scientific literature, documentation) in collaboration with the Ngunnawal Aboriginal Language Group. • Create a Ngunnawal list of priority species. • Embed traditional knowledge into the management of culturally important species (e.g. dingo, wedge tailed eagle, kangaroo, emu, bogong moth) and promote recognition and awareness of these species, and Ngunnawal connections, within the broader Canberra community. • Engage with Ngunnawal community on the reintroduction of culturally important species missing from ecosystems (e.g. Emus into Namadgi National Park). • Celebrate Ngunnawal cultural knowledge and practice through shared learning and the use of the native edible garden at Canberra City Farm. • Investigate approaches that promote greater representation of indigenous Australians in community engagement surveys. • Ensure culturally appropriate or significant plants are incorporated into restoration activities. • Continue to develop and promote Ngunnawal-led climate adaptation strategies, including obtaining Ngunnawal input and endorsement of translocations. • Seek opportunities to address limitations in resourcing and capability within the Ngunnawal community to be able practice culture. • Continue development of digital tools to enable reporting on health of Country, including broadening assessments to incorporate terrestrial areas. • Undertake Ngunnawal Aboriginal Water Assessments, in addition to providing training to integrate alternate water monitoring techniques, such as through WaterWatch. • Develop opportunities for collaboration between Ngunnawal community and divisional science teams through workshops, learning and consultation. • Provide Ngunnawal and First Nations youth opportunities to reconnect onto Country.

		• Deliver an Emerging Elders program to assist future leadership in the Ngunnawal community and other First Nations. • Help build capacity of community to undertake management of Country through developing appropriate supporting structures. • Undertake Ngunnawal led activities for Healing People, Healing Country to connect community back onto Country. • Appoint cultural advisors for restoration to enable cultural input into on-ground restoration projects. • Undertake Murray Crayfish monitoring in collaboration with the Ginninderry Conservation Trust Caring for Country group. • Explore the potential for a Ngunnawal ecological and cultural knowledge map. • Further develop field data capture applications for assessing cultural values and assessing health of Country. • Establish systems or processes to improve awareness of traditional knowledge and cultural assets across the ACT, both tangible and intangible, that can be used to recognise threats and guide appropriate management response by authorised users. • Expand cultural burning across the ACT and neighbouring areas, including with parks and reserves, and continue to progress a Travelling Stock Route (TSR) cultural burning program. • Identify and embed cultural indicators into pre- and post-fire monitoring of outcomes. • Consider principles of culturally sensitive urban design when developing new infrastructure projects. • Embed Ngunnawal traditional ecological values into ecosystem condition assessments.
2.7 Research and monitoring priorities and outcomes have high visibility, in a variety of appropriate forms, within and beyond Government to maximise opportunities for collaboration and the impact of our work on biodiversity conservation, sustainability and liveability.		
Project	**Status**	**Actions 2024-2026**
Improving transparency, visibility and applicability of our work	Ongoing	• Publish datasets on the ACT Government public data portal. • Develop tools, processes and workflows to ensure that advice, research, and monitoring outcomes (both environmental and cultural) are available to land managers and community groups to inform planning and delivery of coordinated conservation action. • Undertake cross directorate and external events (e.g. Nature Conservation Planning days, Ecofocus) to provide opportunities to share work, highlight our achievements, improve collaboration and synergies across teams and undertake science outreach to the community. • Ensure appropriate reports are made available to key stakeholders, and where appropriate are publicly available (e.g. Environmental flows reporting).

		• Engage internal and external stakeholders to promote the effective use of updated NARCLiM climate projections. • Provide regular, high quality content to the EPSDD communications team to highlight cultural and ecological values of parks, reserves and the ACT more broadly, as well as to promote programs, policy and research efforts. • Undertake media as appropriate, via press releases, interview, focused stakeholder groups and news articles. Develop more detailed communication plans for innovative or high profile species and projects to enable strategic media and stakeholder engagement. • Continue to contribute research or monitoring data, outcomes, and expertise through national advisory bodies to encourage interjurisdictional coordination of management responses (e.g. develop codes of practice for invasive species control). • Provide advice to external agencies (e.g. RFS) about emerging threats and preventative measures, such as biosecurity issues. • Publish offsets compliance reports on the publicly available offsets register. • Publicly report the effectiveness of Action Plans, Controlled Native Species Plans and Native Species Conservation Plans, RAMSAR Management Plans and Reserve Management Plans. • Organise coordinated activities through the Connecting Nature, Connecting People initiative in collaboration with partners (e.g. providing trees for planting in urban reserves to contribute to canopy cover targets). • Make the annual EGK conservation management advice publicly available. • Establish and disseminate ecosystem condition assessments through the CEMP Online Hub. • Continue to provide and update information for the EPSDD website, including maintaining and developing PCS offsets and thematic program webpages. • Continue to provide input into the weekly minister briefs in EHP. • Build the role of the EPSDD Science Platform in providing a single entry point for information on EPSDD research and monitoring projects. • Continue to use Sharepoint for dissemination of information within and across teams. • Supply content, including photos and information, for external parties, as requested, including providing content for the State of the Environment reports. • Implement the ONC communications strategy. • Make publicly available the Western ACT Macrophyte project and biennial Murrumbidgee monitoring report.

Action Area 3: Embed Adaptive Management across EPSDD

Embedding an adaptive management approach into our monitoring and research programs is key to enable site and context specific learnings. Through "learning by doing" and actively improving our management to achieve the best possible outcomes, we not only enhance our ability to deliver on our nature conservation goals, but continuously add to the pool of knowledge that contributes to achieving long term support of biodiversity.

3.1 The science, policy, and implementation teams across the Environment Division are "interoperable", delivering joined-up strategic, evidence-based adaptive management.

Project	Status	Actions 2024-2026

Developing an inter-operable approach to planning and evaluation	Ongoing	• Improve linkages between planning, policy, operations, and research and monitoring to enable the effectiveness of action to be reviewed and reported on against strategic objectives and establish frameworks to enable outcomes to feed back into planning.
		• Undertake standardised monitoring, data management, analysis and evaluation across and between programs to provide evidence-based advice for policy development, impact assessment, research collaborations and government decision-making.
		• Use knowledge generated from targeted research to shape programs and improve management.
		• Based on PCT mapping, develop a strategic, prioritised, and landscape-scale map to guide the restoration of lowland ecosystems. This process will include:
		  ○ Developing restoration guidelines to enable a consistent best practice approach.
		  ○ Establishing evidence-based ecological thresholds and realistic SMART targets for ecological condition that support management and decision making.
		  ○ Tracking ecological change caused by development impacts and other threats, or in relation to restoration activities, to assess change in extent and condition of ecological values over time.
		  ○ Improved recording of management interventions to better enable evaluation of effectiveness of action, such as habitat and corridor restoration efforts.
		• Undertake combined annual planning to ensure teams relative contributions to broader EPSDD objectives are understood and clearly articulated, actions undertaken are synergistic rather than duplicative, and supported by a shared pool of knowledge and skills.
		• Improve tracking of priorities, expenditure and delivery through spatial planning and operational coordination.
		• Identify synergies, shared needs, and potential collaborations to develop cross-team business cases.

		• Engage with operational teams during conceptual development of monitoring and research to ensure outcomes align with management needs, and consideration is given as to how outcomes and/or recommendations have a clear mechanism to feedback into operational planning, strategic prioritisation, and executive decision-making. • Improve staff capacity and capability within operational teams to evaluate management interventions, including the effectiveness of different management strategies in achieving outcomes, and testing management assumptions to inform planning. • Establish support networks with program ecologists to share knowledge across teams and to embed adaptive management practices. • Promote the integration of datasets across teams and the shared use of the geospatial ecosystem for data capture and sharing. • Develop appropriate governance structures for key thematic programs (e.g. threatened species and communities, macropods, fire, and restoration) such as steering committees and working groups, to enable collaborative planning, monitoring, data management, evaluation, and reporting. • Codevelop a PCS values-based planning framework across teams to ensure consistency in use of indicators and metrics for ecosystem health. Ensure the framework considers ecological, cultural, and social values of an area, and includes well-articulated objectives, spatial prioritisation of values, trigger points and guidance for management to enable adaptive management. • Improve access to spatial prioritisation of ecological, cultural and social values within a reserve to inform decision-making by Incident Management Teams and prioritise management response following the disturbance (e.g. managing bogs during and after bushfire). • Improve mechanisms for coordination and communication between EPSDD and other directorates for managing urban biodiversity (e.g. TCCS and Urban Planning) and develop a coordinated, cross-Directorate approach to the restoration and conservation of green/blue spaces. • Develop and align processes across EHP to enable consistent assessment and advice into urban development impacts, such as establishing a checklist of conditions for DA/EIS/ESOs. • Improve the process for advice and feedback provision into the annual burn operations plan (BOP) and develop a standardised process for measuring against KPIs. Maintain an awareness and communication with national efforts to support this development. • Evaluate the ecological outcomes of the annual prescribed burn monitoring program (BOP) to provide an evidence base for improving planning and operational practice in fire management. • Undertake a review of ecological guidelines to ensure appropriate fire planning.

		• Establish process for cultural advice and values input on burning programs, including developing training and processes for indigenous values officer roles to provide sound advice on cultural values. • Work with PCS districts and the Fire Management Unit to explore appropriate governance arrangements for planning and approval of ecological burns that consistently and transparently incorporates considerations including ecological merit and operational feasibility. • Promote the Fire Ecology Working Group as a collaborative community of practice for ecological fire management within the ACT, and as a forum for sharing ideas and learnings related to ecological aspects of bushfires and fire management. • Undertake Values Officer training and complete required documentation, including an emergency preparedness and response plan, to enable ongoing development of the role and integration with fire planning and delivery. • Integrate broader ecological objectives and existing monitoring or management frameworks into forestry practices where possible to support adaptive management. • Achieve Forestry Stewardship Council (FSC) certification within plantation areas through monitoring of social, cultural, and high conservation values to evaluate management practices in meeting strategic objectives. Opportunities investigated for integration with broader ecological objectives across EPSDD-managed estate. • Improve collaboration between TCCS and EPSDD to manage trees occurring within the reserve estate that require attention from arborists. • Develop efficient and standardised process for incorporating expert ecological advice into planning and ongoing management of urban treescapes. • Establish a monitoring program that embeds adaptive management and enables evaluation of the Environmental Flows program, including updating the Environmental flow guidelines with monitoring outcomes and best practice improvements for Eflow delivery.
3.2 CEMP provides a coordinated, systematic, and robust biodiversity monitoring program across all ecosystem types in the ACT, which can detect changes in ecosystem condition within the ACT, evaluate the effectiveness of management actions in achieving conservation outcomes, and provide evidence to support decision making.		
Project	**Status**	**Actions 2024-2026**
Undertaking systematic monitoring of ecosystem condition to	Ongoing	• Undertake the statistical analysis and reporting work on question driven studies that address the priority management evaluation needs of land managers. • Complete ecosystem condition assessments for Woodlands and Forests, and update Grasslands, and release online.

inform management		• Develop online applications that enable standardised monitoring of basic ecosystems condition variable for riparian, woodland, and grassland ecosystems. • Continue to support the development of robust monitoring and evaluation processes for new and emerging programs that will use fit for purpose indicators to report against desired outcomes (e.g. reserve level "Health Checks" to support values based planning, "headline indicators" to support the new Nature Conservation Strategy).
3.3 CEMP is mainstreamed across the Division, and its outputs are translated into strategic, statutory, and operational planning.		
Project	**Status**	**Actions 2024-2026**
Embedding CEMP analysis and evaluation of core metrics to report against the ecosystem strategies, relevant action plans and the NCS	Ongoing	• Continue to expand the CEMP online portal to hose all ecosystem condition assessments, priority management evaluation case studies, support tools and resources. • Establish CEMP condition assessments as the framework for reporting on ecosystem strategies and associated threatened community action plans. • Undertake stakeholder forums following the completion of each ecosystem condition assessments to review and assess priority actions. • Leverage existing resources and staff capability to prioritise analysis and evaluation of management program outcomes. • Develop and maintain stakeholder relationships to ensure outputs facilitate adaptive management and are embedded in operational planning. • Ensure outcomes from ecosystem condition assessments contribute to the development of evidence based policy.
3.4 Systems and tools that enable and support adaptive management are widely adopted, including online databases, apps and dashboards that facilitate data visualisation and use (see Section 5 for workflows).		
Project	**Status**	**Actions 2024-2026**
Developing supporting tools for data collection, storage, visualisation and systematic reporting	Ongoing	• Develop and support digital data collection tools with decision support capability and interactive data visualisation that efficiently capture of environmental information through engaging media (e.g. dashboards, apps, web maps or story maps) and integrate relevant information to prioritise, guide and evaluate operational activities. Examples include: o Dashboards visualising the presence of invasive plant infestations (treated and non-treated), recording control efforts, and allowing identification of priority areas for invasive plant control. o Urban lakes fish monitoring dashboard reporting fisheries management activities. o PCS spatialisation of operations dashboard.

		○ PCS Offsets decision tools, including monitoring results dashboard, EPBC benchmark and baseline condition dashboard. ○ Herbage mass decision support tool and dashboard to inform annual kangaroo conservation advice. ○ Bog restoration map to track management effectiveness and monitoring activities postfire. ○ Restoration and Project Information Dashboard (RAPID) to capture proposed and undertaken restoration activities, and record outcomes to enable adaptive management. ○ Threat Prioritisation Tool to assist land managers to make consistent, scientifically based, on-ground decisions for managing herbage mass and to prioritise adaptive management actions based on ecological values and a risk evaluation framework. ○ Rabbit monitoring and control decision support tool to inform priority areas for undertaking rabbit warren mapping, and to prioritise and plan rabbit control programs. ○ Canberra Urban Biodiversity Surveys (CUBS) dashboard. ○ Threatened species dashboard to capture occurrence and population monitoring, including tracking translocations. ○ ACT Wildlife Atlas Viewer. ○ Catchment Health Indicator Program (CHIP) monitoring data dashboard. ○ Incidental ACT Wildlife Alas Record App. ○ ArcGIS FieldMap for urban trees, to build baseline knowledge of the location, type, and condition of trees, as well as record planting activities. ○ Ad-hoc observation of vertebrate pest species dashboard. ○ "Health-check' app to capture rapid condition assessments of reserves. ○ Plant Community Type (PCT) app. ○ Ecological network dashboard. ○ Wild dog & fox baiting application to record baiting effort and takes. ○ Blackberry monitoring app in Lower Cotter Catchment to target management actions and evaluate effectiveness of on-ground works. ○ Ngunnawal Aboriginal Water Assessment data collection tool and database that aligns with CARE principles (Indigenous Data Sovereignty). ○ WaterWatch monitoring app. ○ Water Resource condition dashboard. ○ Applications for standardising data collection for key condition metrics of riparian, woodlands, and grassland ecosystems.

		• Maintain biodiversity data repositories, authoritative datasets, and habitat, fragmentation and connectivity mapping, Plant Community Type (PCT) mapping availability to underpin scientific advice. • Investigate opportunities to streamline or prioritise data collection tools that are job-specific to avoid replication of applications and to streamline outputs to inform operations. • Further develop the Water Hub as funding allows. • Contribute to Atlas of Living Australia biocollect. • Continue to support the ACT Data Lake as a repository for hydrological monitoring data and improve access to data products. • Maintain the CEMP online ecosystem portals to provide an information resource and knowledge base for ecosystem condition across the ACT, and a portal for quick links to tools, contacts, and relevant programs within five broad ecosystems of the ACT. • Develop a front-facing tool for managers to view baselines and triggers as part of the values-based management framework for reserves. • Explore options for enhancing integration of the PCS spatialising operations dashboard and restoration planning tools. • Restructure Waterwatch data to improve capture, display, and usability by making it live and accessible online. • Ensure consistency of field data collections through survey123 and field maps for floristics, weeds, herbage mass and targeted threatened species, including provision of these applications to external consultants. • Continue to facilitate access to NARCliM climate projections for the ACT region, and to provide advice and guidance as to their effective application. • Ensure operational staff have ready access to relevant ecological knowledge and target thresholds, through online dashboards, guidelines, spatial data, and/or decision-making applications, empowering them to make environmental determinations.

Action Area 4: Thought Leadership

Innovation, collaboration and thought leadership are needed for us to address the challenges we face in conserving nature in a rapidly changing world. To ensure ecosystems remain resilient and functioning into the future, we will often need to think "outside the box" for solutions and ways to address complex, multifaceted threats such as climate change, urban growth, and ever-increasing pests and weeds. As we struggle with the increasing pressures placed on biodiversity from anthropomorphic actions, exploring new tools, technology and approached will enhance our ability to tackle these issues.

4.1 Processes and events held across ACT Government and beyond stimulate scientifically informed debate, creative exploration, and the generation of management responses to high impact emerging issues, including climate change adaptation.

Project	Status	Actions 2024-2026
Promoting thought leadership and rising to the challenge of emerging issues	Ongoing	• Partake in Commonwealth led discussions on Global Biodiversity Framework targets and identify contributions from the ACT. • Undertake a review of offsets policy in ACT, including exploring how an ACT offsets policy may align with EPBC legislative changes, such as Nature Repair Market, regional planning, and rural leaseholder stewardship programs. • Identify and establish new formal mechanisms for conservation in areas outside conservation estate (e.g. stewardships etc.) • Scope opportunities to promote informed scientific debate on emerging issues by engaging knowledge-holders within organisations and the broader Canberra community, focusing on significant issues of broad relevance and significance. • Hold collaborative events with research partners on issues of joint significance, to promote insight, collective learning, exploration of solutions and pathways forward, and to articulate a clear and prioritised research agenda. • Continue the Climate Adaptation for Nature initiative in collaboration with CSIRO, to explore and promote adaptation responses in particular areas/issues, including identifying barriers and pathways to change. • Promote the effective use of NARCliM projections through provision of webinars, guidance materials and other events through education and application of risk management approach to their use. • Continue consideration of the transition to co-management of conservation estate. • Continue the water vulnerability assessment program to predict how water resources are expected to change under future climate scenarios, enabling quantitative assessment of risks, and identification of opportunities to future-proof policy.

		• Conduct a fire science review embedding climate adaptation as a core consideration, in a collaboration with key stakeholders, to lay a robust and agreed scientific foundation for the Strategic Bushfire Management Plan (SBMPv5) and the 2024-2029 Regional Fire Management Plan. • Continue to improve understanding of the impacts of invasive species and overabundant native wildlife on natural values under a changing climate, to enable best-practice prioritisation and management response. • Develop and refine threatened species prioritisation mechanisms and progress strategic investment into species and ecosystems identified as in need of immediate action. • Develop and workshop, using a theory of change approach, indicators for biodiversity conservation, including the setting of SMART targets to embed within the new Nature Conservation Strategy. • Improve the consideration of aquatic ecosystems in policy development, urban planning, and priority management actions. • Raise the profile of high-impact threats on biodiversity, such as African Lovegrass, on achieving ACT targets, in particular high-lighting the lack of tools and long-term funding.

Action Area 5: Data Governance and Management

Ensuring that data is collected, cleaned, and stored consistently, with appropriate meta-data, is accessible, and is fit-for purpose, are all fundamental steps to enable evidence-based decision making. Strong data governance, best-practice data management, and adequate resourcing of data management teams will effectively support end user groups and allow advice provision to be based on the best available knowledge.

5.1 Data governance processes and culture that foster the importance of data curation, accessibility and transparency established in the Division.

Project	**Status**	**Actions 2024-2026**
Establishing solid data governance and best practice data management	Ongoing	• Work with EPSDD Data team to improve organisational data maturity, culture and knowledge in line with the EPSDD Data Strategy and ACT Data Governance and Management Framework. • Improve data consistency, accessibility, usability, open access, and management protocols through consistent policies, procedures, and methodologies across teams. • Develop and implement data Standard Operating Procedures (or similar), metadata and accessibility guidelines to guide data management and data sharing. • Define clear roles and responsibilities for the management and governance of datasets, including data custodian, data steward, data manager and data producer, in line with the EPSDD Data policy.

		• Support the EHP Strategic ICT and Data Governance Committee to lead improvements in key areas of data governance, culture, and technology, to ensure uptake of best practice data collection, storage, and management. • Recognise EPSDD data catalogue under the EPSDD data strategy as the authoritative list of data sets. • Form an EPSDD Indigenous Data Sovereignty Working Group. • Provide financial and technical support for Geospatial Ecosystem Governance and Administration (Geohub and ArcGIS Online). • Implement metadata requirements and standards for all datasets. • Introduce dataset integration, provenance, persistent unique identifiers and field standardisation across biodiversity database structure and design. • Maintain and promote use of the ACT Central Taxonomy and related synonymy and species category lists (acttaxonid) in managing and collecting species data. • Support EPSDD to create a single central hub for Geospatial Ecosystem information and GIS support. • Develop a data management strategy for Environmental Offsets. • Improve data integrity through structured data collection tools, validators, provenance, timely cleaning, ground-truthing and checking of data by subject matter experts. • Streamline processes for collecting, storing, and reviewing environmental impact assessment (EIA) data through to DA approval. • Make available well-defined, structured field apps for consistent collection of data and to consultants and community groups were applicable. • Collaborate with state, territory and commonwealth partners on data sharing, sensitive species data management, national sensitive species list and the national Biodiversity Data Repository Project. • Publish the ACT Government Sensitive Species and Ecological Policy. • Embed best-practice data sovereignty principles (e.g. CARE, ICIP) when working with traditional knowledge data, including how it is stored, managed, accessed, and analysed. • Scope opportunities to support staff to develop the knowledge and skills to undertake data management and processing tasks to reduce our reliance of external consultants.
5.2 Innovation and best practice technology for capture, processing and storage of data, collaboration, and interactive visualisation and investigation of results are widely adopted.		
Project	**Status**	**Actions 2024-2026**
Improving tools and technology	Ongoing	• Investigate new technologies that have the potential to improve knowledge of ecological threats, inform management planning or enable more efficient implementation.

for data capture, processing and management		• Find opportunities to design and customise efficient workflow solutions to provide accurate and timely advice for management planning (e.g. rabbit monitoring). • Explore and trial viability of drone technology to assist with wildlife monitoring, operations, habitat or condition assessment, detailed forestry plantation management or floristic diversity monitoring. This includes refinement of different sensor capabilities, such as thermal, LiDAR and multispectral imagery, and radio-tracking. • Explore current and future needs with regards to software licencing, tools, processing requirements and training to support staff to maintain best-practice approach to data collection, management, and evaluation. • Investigate or develop opportunities to leverage best-practice or innovative technologies to improve efficiency of forestry, fire, agricultural, water, NRM and conservation management operations. • Leverage aerial imagery to identify target areas for replacement or management of trees within the urban area to give a revised estimate of cover and condition of canopy. • Scope avenues to improve the way citizen science data is stored or analysed to maximise value for informing planning and implementation of management (e.g. maintaining record of asset history). • Investigate opportunities to capture, retrieve and analyse biodiversity data through bioacoustics technology. • Explore genetic techniques (such as landscape genomics and eDNA) to improve efficiency and accuracy of species monitoring, particularly of threatened species, to guide population restoration and management. • Use LiDAR and other remote sensing technologies to collect high-resolution information to inform reporting and planning, including canopy cover estimates, surface permeability, vegetation assessment, condition assessment, landscape change or mapping structural and other vegetation metrics. • Invest in data infrastructure, analysis platforms/software, AI/deep-learning and large data storage. • Explore options for AI/machine learning processing of image and song meter data. • Migrate workflows and datasets into the new centrally managed EPSDD Geospatial Ecosystem (GE) in accordance with developed EPSDD/TCCS GE Governance Framework1. • Build on the current use of digital asset storage and catalogue platforms for the storage and sharing of image data across EPSDD, ensuring all teams are familiar with their use, and investigate the potential for expanding access to other directorates. • Migrate all staff to ArcGIS Pro (ArcMap to be decommissioned). • Ensure Geohub (Portal), ArcGIS Online platform and suite of web applications are available across EPSDD to enable digital data collection, streamlined data management, analysis, and spatial visualisation. • Improve functionality and access to environmental databases through migration of data to Geospatial Ecosystem through Geohub Portal or ArcGIS Online platform (e.g. macropod, aquatic and floristic monitoring data). • Build a fisheries online angler portal to record catch

		• Ensure that teams based in rural, or remote areas have access to reliable internet connectivity to support best practice data capture, access and governance.
5.3 Workflows that address full adaptive management cycles and strategic objectives beyond data capture and storage are adopted, such as streamlined analysis and data-driven visualisation portals to inform decision-making, policy, and review of management actions.		
Project	**Status**	**Actions 2024-2026**
Embedding adaptive management workflows to better inform decision making and management	Ongoing	• Evaluate all monitoring data to ensure that it is being actively incorporated into appropriate adaptive management frameworks that feed into planning, operations and reporting mechanisms. • Encourage project leads to consider data capture and storage approaches that enable automated processing and use of interactive dashboards to inform operational or management decisions in near real-time. • Update schema used in digital data collection tools to enable efficient ingestion of tree and asset information into ArcGIS Online or Geohub platform. • Investigate opportunities to automate data analysis and evaluation workflows through use of scripting languages (e.g. R, python, arcade), automated data ingestion/management, and reporting systems.
5.4 Data generated by the Division is accessible and catalogued, for government, research institutions and the public, in line with the ACT's Open Data Policy.		
Project	**Status**	**Actions 2024-2026**

Improving data accessibility	Ongoing	• Share under appropriate sharing agreements data with research organisations and other partners, and/or made available in open data catalogues as appropriate.
		• Make accessible data and data applications through internal and external data catalogues including:
		  ○ EPSDD data audit and WhoH data catalogue (PowerBi) (internal)
		  ○ Geospaital Ecosystem Thematic data catalogues
		  ○ Geospatial Open Data Catalogue https://actmapi-actgov.opendata.arcgis.com/
		  ○ dataACT.gov.au
		  ○ Geospatial Ecosystem Sharepoint other Intranet pages
		  ○ EPSDD Science Platform https://www.environment.act.gov.au/nature-conservation/science-platform
		• Enhance awareness of research and monitoring program data within and outside ACT Government to create opportunities to value-add to data through improved integration between complementary research and monitoring activities to inform best-practice management outcomes.
		• Publish data on the ACT Governments open data portal.
		• Encourage the use of metadata, tags, and naming standards to improve findability and interoperability of data.

		• Promote the use of the EPSDD Science Directory, including establishing a public access portal to project titles, summaries, and themes. • Improve findability of information through redevelopment of the EPSDD website. • Continue direct provision of maps and information to land manager stakeholders, such as rural leaseholders, to assist in decision-making and awareness. • Use digital asset storage and catalogue platforms to enable sharing image and acoustic data. • Collaborate with commonwealth on Biodiversity Data Repository project. • Improve biodiversity data flows from development proponents and EPSDD Planning, specifically from Environmental Impact Assessments.
5.5 The use of knowledge bases to capture and reuse research findings is actively explored.		
Project	**Status**	**Actions 2024-2026**
Using knowledge base to support EPSDD Science	Ongoing	• Continue support of the EPSDD Science Directory as a knowledge base for EPSDD Science, research and monitoring projects, including linking project plans, summaries, contacts, data and reports. • Bring in experts from industry and academia to progress discussions around key issues and emerging issues for biodiversity conservation (e.g. urban expansion, climate change).
5.6 Management knowledge is imported into models that are used to support decision-making by EPSDD/others.		
Project	**Status**	**Actions 2024-2026**
Enhancing decision-making by incorporating management knowledge into models	Ongoing	• Engage operational management teams and land managers to include management knowledge into project design, models, and decision support tools. • Engage Ngunnawal to include ecological cultural and management knowledge into project design, models, and decision support tools. • Develop water resource models that reflect water resource management and policies to support further policy and planning decision making. • Incorporate observed changes and results of monitoring into climate change adaptation and models. • Incorporate knowledge around response to fire, weeds, climate change and grazing into threatened species habitat suitability and distribution modelling

PART TWO: Research and Monitoring Themes

1.Climate change

Strategic Objective: *Updated climate change projections are available for the ACT, through the NSW and ACT Regional Climate Modelling (NARCliM) Project partnership, with clearly understood implications; frameworks available to assess and manage risks; and government, industry and the community are supported in assessing policy and management options to mitigate and adapt.*

Knowledge needs and gaps

- The impacts of climate change on natural and built environments at an appropriate scale for decision-making and management.
- Climate refugia and climate connectivity for priority species and ecosystems.
- Climate adaptation pathways for urban sectors, following on from drought plan adaptation pathways for rural sector.
- Likely changes in:
    - ecosystem function, resilience, and ecosystem service provision
    - fire regimes
    - distribution and threat status of species and communities
    - the invasiveness of plant and animals
    - ecosystem processor species (e.g. pollinators, soil disturbers and decomposers)
    - soils, including soil carbon
    - the resilience of species and communities to climate change

Current Projects	Status	Actions 2024-2026
Climate Adaptation for Nature initiative	Continuing	Explore adaptation responses and identifying barriers and pathways to change.
The Living Labs project:	New	Investigate the success of single species and mixed species understorey plantings.
Drought Plan Implementation	New	Implement the drought plan to prepare the rural sector for climate change.
Sphagnum translocations	New	Undertake sphagnum translocations to test whether these are viable management actions to maintain sphagnum bogs under climate change.
Bog hydrology	New	Monitor hydrological processes in bogs to detect changes over time in response to climate
Climate smart farming	New	Deliver the climate smart farming program, maintaining soil health under climate change.

To be prioritised for delivery as resources enable

- Re-conceptualised conservation goals and prioritised conservation actions in a rapidly changing climate. Investigate the use of the Resist-Accept-Direct (RAD) framework as a principle for guiding management action and decision making around climate change.
- Embed climate change adaptation in rehabilitation and restoration planning for ecosystems and species, including determining optimal techniques for improving habitat for climate change adaptation and resilience.
- Increased understanding of impacts of climate change-related changes in bushfire and water quality and quantity on ecological values, including identification of key refugia under likely climate scenarios.
- Map future distributions of local and non-local plant species under different climate change scenarios.
- Modelling of species movements, climate refugia and assessment of species vulnerability under climate change.
- Incorporating stochasticity and uncertainty into management programs, including considering annual climate predictions in ecological advice and decision-making.
- Incorporating climate predictions into grass growth models to better inform kangaroo management.
- Work with the community to improve understanding of adaptation and explore options including recognising ecosystem components may differ in the future from those that are currently persisting in the region.
- Investigating options for improving weed and pest management under climate change.
- Modelling of fire patterns and frequency under climate change scenarios.
- Determining if priority species have adequate genetic diversity and essential traits to enable adaptation and persistence under climate change.

2. Ecosystem processes and resilience

Strategic objective: *Improved understanding of ecosystem processes that drive ecological change and identification of opportunities to build and maintain resilience.*

Knowledge needs and gaps

- Appropriate fire and water flow regimes, including the identification of thresholds of change, so that our management actions can maintain or improve ecological of terrestrial and aquatic ecosystems.

- Effective approaches for restoring connectivity across and between reserves, rural and urban environments to improve resilience.
- Effective approaches for catchment and local-scale restoration for improvement in water quality and quantity and aquatic ecosystem condition.
- Function of soil processes and biota, including the impacts of their disruption.
- Cultural connectivity and how a Ngunnawal seasonal calendar can be integrated into management.

Current Projects	Status	Actions 2024-2026
Installing leaky weirs to promote postfire recovery in bogs	Continuing	Trial effectiveness of leaky weirs to promote post-fire recovery in upland bogs
Installing shade cloth to promote postfire recovery sphagnum bogs	Continuing	Investigate the effectiveness of shade cloth at increasing survival and growth of sphagnum moss in bogs post-fire.
Ecological Network	Continuing	Further develop ecological connectivity models for guiding land use decision making, including development and priority habitat restoration for grassland, woodland, and aquatic/riparian ecosystems.
Grassy ecosystems restoration	New	Conduct the native woodlands and grasslands restoration project to improve condition and connectivity in grassy ecosystems.
Re-naturalising urban waterways	New	Undertake Sullivans creek project to re-naturalise urban waterways and rehydrate soils and ground water.
Herbage mass monitoring	Continuing	Undertake annual herbage mass assessments to inform and evaluate effective land management as it relates to grasslands and grassy woodlands ground layer vegetation.
Bare rock supplementation	Continuing	Investigate biodiversity responses to reinstating rock back into ACT grasslands, including effects on invertebrates, floristic diversity and richness and reptiles.
Bogs and fens monitoring and management program	Continuing	Develop and implement a coordinated bogs and fens monitoring and management program that monitors key values, threats, and effectiveness of management actions.
Waterwatch Catchment Health Indicators Program	Continuing	Develop numerical scores of catchment health using data collected by Waterwatch volunteers.
Lakes and Rivers Water Quality Program	Continuing	Monitor water quality in rivers and urban lakes of the ACT to track waterway condition and inform management decision.
Asset Evaluation and Land-Use Monitoring Program	Continuing	Undertake actions to address critical knowledge gaps on pollutant loads generation by land use types across the ACT and to assess the performance of Water Sensitive Urban Design infrastructure.
Conservation Effectiveness Monitoring Program	Continuing	Refine the Conservation Effectiveness Monitoring Program to evaluate the current condition of woodland and forest ecosystems, inform adaptive management and track trends in condition over time.
Subalpine Woodlands Project	Continuing	Investigate the effects of prescribe burning and bushfires on subalpine woodland vegetation structure and fauna assemblages.

Current Projects	Status	Actions 2024-2026
Cultural burning program	New	Build capacity to conduct ecological and cultural burns and improving enabling systems for ease of delivery.
Weed density and distribution mapping	Continuing	Map and assess weed distribution and density at a landscape scale.
Adaptive weed management	Continuing	Collaborate with CSIRO on the adaptive weed management project to explore the response of weed species to various management inputs and develop a stronger evidence base to inform management.
PCT mapping	Continuing	Progress regional plant community type (PCT) mapping to provide accurate baseline information to guide landscape scale restoration priorities.
Impact of flows on conservation values	Continuing	Understand how development affects groundwater and surface water and the flow on effects to conservation values.
Biodiversity sensitive urban design technical guidelines	New	Develop and publish ecologically sensitive urban design technical guidelines to inform revised urban planning policies, and consistent and strategic delivery of on-ground programs.
Impacts of infrastructure on species and ecosystems	New	Evaluate the impacts of infrastructure development on ecological connectivity for species and ecosystems.

To be prioritised for delivery as resources enable

- Model optimal landscape positions for key native plant species to guide revegetation.
- Determine priority landscape-scale connectivity needs for grassland, woodland, and aquatic-riparian habitats within the ACT and between the ACT and NSW.
- Understanding impact/effectiveness of corridors for broad fauna groups.
- Understanding cultural flow needs for the Murrumbidgee River.
- Development of cultural resource management plan that recognises the economic, social, and cultural value of ecosystem services for maintenance of culture.
- Determine the characteristics of appropriate fire regimes to promote biodiversity.

3. Species and community ecology

Strategic objective: *Innovative research to improve the understanding of the genetics and ecology of high-priority species and ecological communities, as a basis for informing and evaluating management and policy.*

Knowledge needs and gaps

- Distribution, abundance, conservation status and management needs of priority invertebrates.
- Fundamental ecological dynamics and processes of high-priority species and communities to inform adaptive management.

- How fire regime and scale interacts with lifecycles of priority flora and fauna species in grassy systems.
- How grazing regimes (native vs. livestock) affect priority species and communities in grassy systems.
- The effects of human access and infrastructure on target conservation values.
- Key interventions that can promote ecosystem resilience and generate broad biodiversity benefits.
- Threatened species and ecological values distribution in areas that have under-represented sampling.
- Captive breeding, genetic management, use of safe-havens and reintroduction techniques to safeguard genetic diversity, promote threatened species conservation, and restore lost species from the landscape.
- The role of burrowing invertebrates and soil heath in grassland species richness.
- the effectiveness of restoration interventions including aquatic, riparian and terrestrial ecological community restoration techniques.

Terrestrial flora and vegetation communities

Current Projects	Status	Actions 2024-2026
Protecting and connecting endangered woodlands in the ACT	Continuing	Improve the status of Box Gum Woodland areas through targeted management activities.
Mature trees survey	New	Identify of mature trees of significant value for registration.
Restoration prioritisation tool	New	Develop a restoration prioritisation tool for grassy ecosystems
Threatened flora translocations	Continuing	Enhance threatened species populations, including use of translocation, of priority threatened flora to increase number of sites occupied, population size and genetic diversity, and minimise risk of loss.
Survive and Thrive project	Continuing	Conduct the Survive and thrive partnership with the National Parks Conservation Trust for securing genetic material and determining propagation techniques for restoration of populations of at-risk flora species.
Herbage mass monitoring	Continuing	Undertake herbage mass, floristic composition and weed density monitoring.
Alpine bog seedbanks	New	Examine the diversity of soil seedbank in a high elevation bog of NNP postfire.
eDNA library	Continuing	Develop an eDNA reference library for flora species, including orchid and lilies.
Offsets monitoring program	Continuing	Monitor the ecological condition of the Molonglo River Reserve and associated offset sites.
Conserving Canberra Restoration Project	New	Explore the use of the recovery wheel for guiding restoration towards a target condition.
Canberra Spider Orchid ecology	Continuing	Conduct research into germination, pollination, habitat, and ecology of the Canberra Spider Orchid.

Current Projects	Status	Actions 2024-2026
Genetic diversity of Tuggeranong Lignum	New	Use outcomes of populations genetic analysis of Tuggeranong Lignum to guide increase genetic diversity of the insitu population.
Small Purple Pea translocations	Continuing	Translocate Small Purple Pea plants grown at the Australian National Botanical Gardens into select reserves.
Ginninderra Peppercress seed translocation trial	New	Undertake Ginninderra Peppercress seed translocation trial in partnership with ANBG and FOG, to understand interactions with smoke and fire.
Woodland thinning trial	Continuing	Conduct woodland thinning trial monitoring to identify effects of thinning on habitat structure and growth.
Threatened flora monitoring	Continuing	Undertake threatened flora species monitoring, including field checks, seed collection, data analysis and reporting of species conservation status.
Geophyte monitoring in Goorooyaroo Sanctuary	New	Undertake targeted geophyte monitoring in Goorooyaroo nature reserve to track impact of native herbivore grazing.
Developing distribution models for threatened and rare plants	Continuing	Develop distribution models for over 100 local plant species to guide restoration and management actions.
PCT mapping	Continuing	Refine and undertake PCT vegetation mapping across key reserves to better understand condition, management requirements and restoration opportunities.
Benefits of understory plantings	New	Explore how understorey plantings and addition of habitat features influence the health or condition of mature trees within an urban context.

Terrestrial Fauna

Current Projects	Status	Actions 2024-2026
Threatened fauna species distribution modelling	Continuing	Develop species distribution models for priority threatened species.
MFWS and Goorooyaroo thermal arboreal surveys	New	Undertake thermal surveys of nocturnal fauna to compare densities inside and outside Mulligans Flat/Goorooyaroo Sanctuary.
MFSW Threatened Species reintroductions	Continuing	Undertake species reintroductions as part of the Mulligans Flat/Goorooyaroo Sanctuary woodland restoration.
Impacts of bettongs in MFWS	Continuing	Conduct a snap-shot assessment of potential herbivory impacts of bettongs in Mulligans Flat/Goorooyaroo Sanctuary.
ACT Habitat and Connectivity Project	New	Establish baseline fauna data for the ACT Habitat and Connectivity Project using genetic indicators.
Woodland bird monitoring	Continuing	Monitor species richness and abundance of woodland birds.
Genetic management of fenced populations	New	Monitor genetic and population management of free-ranging threatened species within fenced sanctuaries and reserves.
Pink-tailed Worm Lizard habitat mapping	Continuing	Map and restore of Pink-tailed Worm-lizard habitat
Pink-tailed Worm-lizards translocation trial	Continuing	Undertake a trial translocation of Pink-tailed Worm-lizards.
Low impact monitoring of Pink-tailed Worm-lizards	Continuing	Undertake Pink-tailed Worm-lizard monitoring in offsets using low impact survey techniques.
Superb parrot research	Continuing	Conduct research on Superb Parrot nestling recruitment, movement and survival.

Current Projects	Status	Actions 2024-2026
Golden Sun Moth habitat and population monitoring.	Continuing	Monitor of Golden Sun Moth habitat and populations at key sites (offsets and reserves).
Natural burrow monitoring	Continuing	Monitor natural burrows in key grassland reserves and offsets.
Striped Legless Lizard habitat and population monitoring	Continuing	Monitor Golden Sun Moth habitat and populations at across key grassland reserves and offsets.
Striped Legless Lizard population response to fire	New	Investigate Striped Legless Lizard population response to fire and translocation.
Canberra Raspy Cricket surveys	New	Undertake surveys for population assessment and distribution of Canberra Raspy Cricket.
Genetic management of threatened fauna	Continuing	Undertake captive breeding, husbandry, and genetic management of threatened species, including Canberra Grassland Earless Dragon, Northern Corroboree Frog, Brush-tailed Rock-wallaby and Koala (Gula) with a focus on increasing the productivity of the insurance colony for Canberra Grassland Earless Dragons.
Canberra Grassland Earless Dragon Project	Continuing	Monitor Canberra Grassland Earless Dragon habitat extent and condition.
Canberra Grassland Earless Dragon Project	Continuing	Monitor Canberra Grassland Earless Dragon populations and further investigation of under-surveyed areas.
Canberra Grassland Earless Dragon Project	New	Target restoration of priority release sites for translocated Canberra Grassland Earless Dragons.
Canberra Grassland Earless Dragon Project	New	Undertake reintroductions of captive bred Canberra Grassland Earless Dragons into priority sites.
Canberra Grassland Earless Dragon Project	Continuing	Evaluate and enhance Canberra Grassland Earless Dragon habitat including burrow suitability and availability.
Little Eagle Project	Continuing	Study movement and breeding success of Little Eagles in the ACT.
Platypus ecology in the ACT	New	Monitor the population dynamics and ecology of platypus in a semi-wild population.
Greater Glider monitoring	Continuing	Monitor of populations of greater gliders in Namadgi National Park.
Alpine skin monitoring	New	Undertake surveys for Mountain Skink and Alpine She-oak skink in Namadgi National Park.
Smoky Mouse monitoring	New	Undertake surveys for Smoky Mouse and Mountain Pygmy possum in Namadgi National Park.
The ecological role of Dingoes in Namadgi National Park.	Continuing	Explore the ecological role of Dingoes in Namadgi National Park.
Carcass utilisation study	New	Investigate utilization of carcass resources in Namadgi NP and implications for pest management.
Dingo monitoring and genetic assessment	New	Undertake Dingo population monitoring and genetic assessment of populations in Namadgi National Park.
Dingo management	New	Investigate the socioeconomic wellbeing of landowners, cultural and community expectations around Dingo management.
Green and Gold Bell Frog reintroductions	New	Trial Green and Gold Bell Frog reintroductions into urban wetlands of the ACT.

Current Projects	Status	Actions 2024-2026
Assisted colonisation of the Northern Corroboree Frog	Continuing	Trial assisted colonisation of the Northern Corroboree Frog to lower elevation sites, conservation translocations and monitoring of historical sites.
Threat mitigation for the Northern Corroboree Frog	Continuing	Trial new approaches to mitigating threats and re-establishing self-sustaining populations of Northern Corroboree Frogs.
Small native mammal surveys in Canberra Nature Park	Continuing	Undertake surveys to obtain baseline data on small native mammal, arboreal mammal, and bat population distributions across Canberra Nature Park.
Small native mammal habitat needs	New	Conduct research to better understand habitat needs for the persistence of small native mammal populations and explore options for restoration of small mammal habitat in Canberra Nature Park.
Gula monitoring	Continuing	Undertake baseline monitoring for Koalas in the ACT.
Reintroduction of the endangered Brush-tailed Rock Wallaby	Continuing	Assess potential sites for the reintroduction of the endangered Brush-tailed Rock Wallaby into Namadgi National Park and Tidbinbilla Nature Reserve.
Translocation of the endangered Brush-tailed Rock Wallaby	Continuing	Investigate the response of Brush Tailed Rock Wallabies to a conservation translocation within Jedbinbilla Safe Haven to inform long term strategies for reintroductions into the wild.
Reintroduction of Emus into Namadgi National Park.	New	Explore the potential reintroduction of Emus into Namadgi National Park.
Genetic management of the Long-nosed Potoroo	New	Undertake genetic management of the Long-nosed Potoroo in Eucalyptus Forest, Tidbinbilla Nature Reserve. to aid management of small populations within fenced areas.
Violet Copper Butterfly surveys	Continuing	Monitor the Violet Copper Butterfly to ascertain distribution in Namadgi National Park.
Postfire monitoring and recovery of the Broad-toothed Rat	Continuing	Undertake postfire monitoring and recovery of Broad-toothed Rats in Namadgi National Park.
Scarlet Robin monitoring of breeding sites	New	Monitor habitat use of the Scarlet Robin and mixed flocks, with a focus on identifying key connectivity corridors and migration pathways.
Surveying for Keys Matchstick Grasshopper	New	Survey for Keys Matchstick Grasshopper in the ACT to establish baseline distribution, identify threats and management actions needed, and undertake population surveys.
Bare-nosed Wombat population monitoring	Continuing	Undertake bare-nosed wombat population and mange prevalence monitoring in the ACT.
Audit and management of nest boxes in the ACT	New	Develop new guidelines and undertaking an audit for the strategic management of nestboxes in the ACT.
Gang Gang ecology project	Continuing	Undertake research into Gang Gang ecology and breeding distribution

Aquatic fauna and vegetation

Current Projects	Status	Actions 2024-2026
Trout Cod population augmentation	Continuing	Augment Bendora Trout Cod population with translocated captive bred individuals and integrating ACT population into the national conservation hatchery program.

Current Projects	Status	Actions 2024-2026
Monitor Two-spine Blackfish populations.	Continuing	Monitor the effects of the delivery of environmental flows in the Cotter River on threatened Two-spine Blackfish populations.
Postfire recovery of Two-spined Blackfish in the Cotter River.	Continuing	Implement a postfire recovery strategy and associated actions for Blackfish in the Cotter River.
Murrumbidgee Fish Monitoring Program.	Continuing	Undertake the Murrumbidgee Fish Monitoring Program.
Natal origins of Golden Perch.	Continuing	Investigate the natal origins of Golden Perch.
Monitoring montane spiny crayfish	Continuing	Monitor montane spiny crayfish recovery after fire in bog and creek habitats.
Genetic diversity of spiny crayfish	Continuing	Investigate the genetic diversity within spiny crayfish populations, appropriate management actions and determining connectivity between locations.
Genetic rescue of Macquarie Perch	Continuing	Undertake genetic rescue of Macquarie Perch in the Cotter River through translocation.
Riparian restoration	New	Restore riparian areas of creek lines on rural lands.
Farm dams project	Continuing	Convert farm dams into biodiversity havens.
Macrophytes of the ACT.	New	Investigate the distribution and ecology of macrophytes of the ACT.
Waterways crossings layer	Continuing	Update and maintain waterways crossings layer to advise on PCS roads upgrades and management.

To be prioritised for delivery as resources enable

- Establish baseline ecological condition state for forest ecosystems, particularly upland forest for which there is very little data available.
- Work with Ngunnawal community to identify cultural importance of native fish species in the ACT and inform appropriate species conservation actions.
- Monitoring of priority threatened invertebrate populations.
- Exploring options for non-lethal dingo control.
- Encourage and support further research with the Ngunnawal community to identify and assess the significance of Aboriginal sites in and surrounding the Ginini Flats Wetland Complex and other bogs.

4. Threats

Strategic objective: *Improved understanding of key current and future threats (beyond climate change) to the ACT's environment, agriculture, and liveability, in order to inform effective management responses.*

Knowledge needs and gaps

- Threat priority level of European Wasps in the ACT by considering the ecological and social impacts to inform appropriate scale and nature of management response.
- The impacts of urban development on Murrumbidgee native fish and other native species of concern, such as small mammals.
- How to work better with the community to prevent release and transfer of invasive species.
- How to ensure persistence of plantation assets under increasing risk of bushfire, pests, or pathogens, including under future climate predictions.
- Prediction of, and response to, plant invasion pathways.
- How to effectively raise the profile of invasive weeds as a high-risk threat to biodiversity, and how early action is key for cost effective conservation.
- Innovative and cost-effective native and introduced herbivore management techniques to protect environmental, economic, and social values.
- Ecosystem impacts of invasive predators and other animals, to inform appropriate management actions.
- How to improve awareness of development-related threatening processes (e.g. environmental contamination, habitat loss and fragmentation) and interactions between these.
- The impacts of specific human behaviours on ecological systems.
- Economic impost of 'on farm' environmental threat management and implications for broader biodiversity values.

Current Projects	Status	Actions 2024-2026
Controlling St John's Wort	New	Trial a comparison of methods for broadscale control of St John's Wort.
Invasive species prioritisation	New	Undertake prioritisation of invasive species to inform priority management action.
Impact of fishing regulations on Murray Cod	New	Monitor effects of change of fishing regulations on Murray Cod populations.
Environmental flows monitoring	Continuing	Monitor environmental flows to manage impact of river regulation in the Cotter River.
Alien fish species distribution and management	Continuing	Investigate into the presence of alien fish species and exploration of management options.
Murrumbidgee to Googong monitoring	Continuing	Monitor Murrumbidgee to Googong water extraction pipeline impacts on native fish.
Dieback Assessment and Remediation Project	Continuing	Trial the use of carbon supplementation (sugar and mulch) to reduce soil nutrients and improve health of Blakely's Red Gum trees.
Community weed control support program	New	Conduct a community stewardship weed control support program.

Current Projects	Status	Actions 2024-2026
SaferPet™ tag trial	New	Trial SaferPet™ tags to improve compliance of cat containment and to reduce the presence of wandering pet cats.
Feral cat trapping trials	New	Undertake “smart cat trap” feral cat trapping trials in Namadgi National Park.
Muzzled canid ejectors trials	New	Trial muzzled canid ejectors for lethal control of foxes in the presence of Dingoes and dogs.
Improve monitoring of feral pigs and deer	New	Improve monitoring of feral pigs and deer populations and impact in the ACT, including trialling new methods.
Snow Gum dieback project	New	Undertake Snow Gum dieback detection using drone-based multispectral and LiDAR imagery.
Setting priorities for weed management.	Continuing	Set priorities for weed management.
Subalpine woodlands project	Continuing	Research effects of wildfire and planned burns on subalpine woodland structure, habitat, and fauna diversity in Namadgi National Park.
Soil chemistry project	Continuing	Investigate whether changing soil chemistry can be used to control Phalaris, as part of restoration.
The relationship between elevated fuel density, time since fire and fire severity	Continuing	Use LiDAR to investigate the relationship between elevated fuel density and time since fire and fire severity in Namadgi.
Ecological effects of planned burning	Continuing	Investigate ecological effects of planned burning on dry forest communities in Canberra Nature Park.
Kangaroo-vehicle collisions in the ACT.	Continuing	Investigate actors influencing kangaroo-vehicle collisions in the ACT.
Assessing the efficacy of GonaCon in Red-necked and Swamp Wallabies.	Continuing	Assess the efficacy of GonaCon in Red-necked and Swamp Wallabies.
Assessing the efficacy of hand and dart delivered GonaCon in Eastern Grey Kangaroos.	New	Assess the efficacy of hand and dart delivered GonaCon in Eastern Grey Kangaroos.
Integrating GonaCon immunocontraceptive into the Eastern Grey Kangaroo management program	Continuing	Integrate the use of GonaCon immunocontraceptive vaccine into the Eastern Grey Kangaroo management program and evaluating effectiveness at limiting population growth and reducing the need for future culling.
Macropod surveys.	Continuing	Undertake annual Canberra Nature Park kangaroo and wallaby population surveys.
Assessing the impacts of Sambar Deer	Continuing	Assess the impacts of Sambar Deer on subalpine woodlands, and montane forests.
Fuel dynamics	New	Investigate fuel dynamics projects.
Angling impacts on native fish.	New	Understand the impact of illegal angling on sustainability of native fish.
Herbivory impacts at Mulligans Flat Sanctuary.	Continuing	Investigate herbivory impacts on shrubs at Mulligans Flat Sanctuary.
Delivery vertebrate pest programs	Continuing	Deliver weeds and vertebrate pest programs targeting control of priority fauna species such as pigs, rabbits, deer, and Dingoes.
Noisy miner project	Continuing	Conduct noisy miner colonisation study.
High country wetlands project.	New	Manage climate change, weeds, and vertebrate pests in high country wetlands project.

Current Projects	Status	Actions 2024-2026
Transfer reach survey of Two-spined Blackfish	New	Undertake transfer reach survey of Two-spined Blackfish in the Cotter River, to understand impact of water supply transfer flows from Corin Dam.
Feral cat monitoring	New	Commence feral cat monitoring to establish baseline levels at the reserve-urban interface of cat containment areas, and in biodiversity hotspots.
Fox and cat monitoring in offsets and Ainslie-Majura reserve.	Continuing	Conduct fox monitoring in offsets and Ainslie-Majura reserve.
ARC Linkage Snowgum Dieback project	Continuing	Monitor Snowgum Dieback in Namadgi National Park
The role of soil chemistry in Eucalyptus dieback	Continuing	Investigate the role of soil chemistry in Eucalyptus dieback and implications for dieback management in the ACT
Dieback resistance in Eucalyptus blakelyi	Continuing	Explore intraspecific variation in dieback resistance in Eucalyptus blakelyi

To be prioritised for delivery as resources enable

- Investigating the presence of feral deer in urban areas.
- Undertake monitoring to assess the effectiveness of invasive plant management practices to improve environmental, economic, and social values.
- Compare control of transformer weeds (e.g. African Lovegrass, Serrated Tussock, Blackberry) with control of weeds of disturbed areas (e.g. thistles, Paterson's Curse, annual grasses).
- Investigate impacts of invasive plant species on ecosystem processes, such as soil chemistry, fire risk and competition with native species.
- Improve understanding of alternate management options to treat priority weeds where effectiveness of current methods is reduced through herbicide resistance or changing climate.
- Education and engagement of community gardens to raise awareness about biosecurity issues, reporting mechanisms and preventative measures.
- Demonstrating management effectiveness of invasive species control programs through quantitative monitoring and analysis of program records. How to demonstrate assumption that continued management is effective.
- Support NatureMapr project on the effect of mega-disturbance on eucalyptus health.
- Spatial assessment of Eastern Grey Kangaroos density across all land tenures and establish a periodic monitoring program.

- Investigate the abundance and potential impacts of Brushtail Possums within the urban footprint, including reserves (e.g. predation, competition, virus vector, captive release individuals) to assess whether management is needed.

5. Urban sustainability and wellbeing

Strategic objective: *Knowledge established to maintain or enhance biodiversity values across the urban setting and the interface with reserves and clarify the contributions of nature/biodiversity to the wellbeing of Canberra's citizens.*

Knowledge needs and gaps

- Biodiversity hotspots in urban environments.
- An integrated, comprehensive, and scientifically informed vision for Canberra's development that maintains or enhances conservation outcomes.
- How to design and planning features for homes, gardens, parks, waterways, and suburbs to increase wildlife benefit through the provision of habitat or connectivity.
- The extent and impacts of urban intensification, urban sprawl and urban infrastructure on biodiversity and human-wildlife conflicts, and the efficacy of approaches in reducing impacts.
- The relationship between nature conservation and community wellbeing, and how conservation contributes to achievement of the ACT's wellbeing targets.
- The cost-benefit of achieving biodiversity sensitive urban design.
- Patterns, trends, motivations for and experiences of park visitation and identifying acceptable levels of ecosystem change due to visitor impact.
- The barriers to and benefits of changing specific human behaviours from the perspective of relevant social groups.
- Water needs to support blue and green infrastructure, particularly under future climate predictions.
- The efficacy and cost-effectiveness of specific behaviour-change interventions.

Current Projects	Status	Actions 2024-2026
Urban habitat and connectivity models	Continuing	Further refine urban habitat and connectivity models to target conservation and restoration of priority movement corridors.
ACT Urban Habitat and Connectivity Project	New	Develop heat map of priority values to identify core areas of importance and optimise multi-taxa corridors.
ACT Urban Habitat and Connectivity Project	New	Develop a Biodiversity Sensitive Urban Design Guide.

Current Projects	Status	Actions 2024-2026
ACT Urban Habitat and Connectivity Project	Continuing	Refine and update the Ecological Network and publish on the Ecological Network Dashboard.
Planting guide for urban flora	New	Develop a species planting guide for urban trees, shrubs, and ground layer plants.
Urban Forest Ecological Advice map	New	Develop of an Urban Forest Ecological Advice map, capturing community knowledge of planting and no-planting (grassland) areas.
insect pollinator surveys	New	Complete insect pollinator surveys in urban grasslands and woodlands, utilising citizen scientists.
Urban riparian zones surveys	New	Undertake floristic and structural diversity surveys in urban riparian zones to assess condition.
Urban riparian zone condition assessment tool	New	Develop an urban riparian zone condition assessment tool, based on biodiversity and bank condition indicators.
Monitoring development impacts	New	Develop reporting metrics for urban development impacts, and subsequent restoration, including a public facing dashboard to track loss and restoration efforts.
Baseline connectivity indices	New	Establish baseline connectivity indices for grasslands (using grassland reptiles), woodlands (using small-medium terrestrial mammals), riparian zones (using riparian reptiles and mammals) and aquatic ecosystems (using small native fish) to set policy goals within the new Nature Conservation Strategy, and track restoration progress.
The value of biodiversity in Canberra.	New	Explore people's value of biodiversity and different types of urban green space, based on land value-proximity relationships to biodiverse bird communities for residential zones in Canberra.
Pollination services	Continuing	Assess pollination services provided by native bees in an urban context and compare insect pollinator biodiversity assessment outcomes when using traditional vs. citizen science methods.
PCT Mapping	Continuing	Undertake Plant Community Type (PCT) mapping (and zone mapping where appropriate) for non-reserved EPSDD managed areas in Canberra.
First Hike project	New	Deliver the "First Hike project", which funds community groups to take new migrants on a camping trip to Namadgi National Park to connect with nature.
Connecting to nature	New	Develop programs that enable people with mental health challenges to connect to nature as a preventative and mitigation activity.
Values mapping	New	Complete "hot spot" mapping of urban areas within the ACT.
Thermal gradients of living infrastructure	New	Monitor temperature of different living infrastructure types across urban areas in the ACT to investigate thermal benefits of different structures.
ACT canopy cover estimates	Continuing	Update estimated canopy cover across urban areas in the ACT using aerial LiDAR imagery.
Canberra community climate resilience	New	Undertake a longitudinal survey of climate resilience within Canberra community.
Native fish stockings in urban lakes.	Continuing	Monitor native fish stockings and carp removal ponds (Tuggeranong only) in the urban lakes.

Current Projects	Status	Actions 2024-2026
Wildlife vehicle-strikes	Continuing	Collect data on vehicle-strikes of wildlife through Urban Wildlife Program and assess for trends to inform management.
Kama Nature Reserve, long-term monitoring program	Continuing	Continue the long-term monitoring program at Kama Nature Reserve, that aims to measure change in biodiversity values with an encroaching urban edge.
Urban tree canopy project	New	Investigate and monitor the condition of urban tree canopies using multispectral imagery.

To be prioritised for delivery as resources enable

- Investigate community well-being, perspectives and behaviours related to urban nature.
- Improve our understanding of the importance of recreational fishing to health and well-being.
- Assess the impact of community activities on natural ecosystems and species, perhaps including expanded network of visitation counters across reserves.
- Use cost-benefit analysis techniques to guide management of vehicle-wildlife interactions through road design or other mitigation measures.

6. Rural lands

Strategic objective: *Improved understanding of approaches to support ACT Rural Landholders to be productive and environmentally sustainable.*

Knowledge needs and gaps

- Systems of sustainable agriculture, grazing and livestock management, niche/alternative industries and certification and embed integrated pest management onto rural lease lands.
- Approaches for maintaining and enhancing on-farm biodiversity, soil health, water quality and supply.
- Factors affecting landholders' engagement in sustainable production activities.

Projects

Current Projects	Status	Actions 2024-2026
Climate smart farming	New	Deliver the climate smart farming program, maintaining soil health under climate change.
Managing agricultural enterprises in a changing climate.	New	Increase resilience of farms and farmers, including improving mental health of rural leaseholders, in particular around the challenges of managing agricultural enterprises in a changing climate.
Restoring woodlands and grassland	New	Restore woodlands and grassland ecosystems on rural lands.

Current Projects	Status	Actions 2024-2026
ecosystems on rural lands.		
Protecting biodiversity values on rural lands.	New	Explore mechanisms for protecting biodiversity values on rural lands, including stewardship, covenants, or zone of rural leases.
Introduction of dung beetles to improve soil condition.	New	Undertake releases of dung beetles on rural lands, including the introduction of "winter" dung beetles to improve soil condition.
Refine mapping of vegetation on rural lands.	New	Refine mapping of vegetation on rural lands to inform stewardship and management.

To be prioritised for delivery as resources enable

- Encourage improved ecosystem connectivity and vegetation recruitment on rural lands.
- Monitor the effects of stock exclusion and grazing regimes on the retention/loss of mature native paddock trees and on tree health.
- Assess the extent of landholder understanding of agricultural impacts resulting from the loss of mature/paddock native trees and the steps required to maintain or improve existing tree cover.
- Research the behaviour of vertebrate pests which move between reserves and neighbouring rural leases to enable improved and integrated pest management.
- Explore efficacy and impact of stewardship payments for rural landholders on biodiversity and native vegetation management.
- Develop guidance on the management of chain of ponds and the advantage or impacts this has on the health of streams.
- Exploration of potential of market-based instruments on farms.
- Monitor EGK populations on rural lands to inform management decisions.

7. Fire Management

Strategic objective: *Knowledge and evidence base generated to guide fire management practices that balance the need to protect human life and property with other land management objectives, particularly conservation of environmental and heritage values, in a changing climate.*

Knowledge needs and gaps

- How to predict fire behaviour to reduce risks to human life, property, and ecological values.
- The effectiveness of interventions for post-fire recovery.
- Post-fire water quality risks and impacts, and how best to mitigate these.

- The ecological impacts of prescribed burning regimes to inform fire management programs.
- Strategic fuel management options that optimise bushfire risk and environmental outcomes.
- Best management options to effectively protect bog environments during bushfire so that the ecosystem and species can recover postfire.
- Options for effective predator control in bogs postfire.
- Long-term fuel dynamics of ACT ecosystems in response to prescribed burning
- Aspirations of Ngunnawal people regarding burning as a management tool, including how to incorporate cultural knowledge and techniques into planned burns.
- The influence of weed monocultures on fire risk and behaviour, and how to best manage fire in these landscape contexts.

Current Projects	Status	Actions 2024-2026
Monitoring of prescribed burns	Continuing	Undertake monitoring of prescribed burns to evaluate environmental outcomes against objectives and provide adaptive management advice for burn planning and operations.
Subalpine woodlands project	Continuing	Understand the impact of fire regimes on recovery of fauna and flora of subalpine woodlands.
Burning as a tool for grassland management	Continuing	Trial the role of burning as a tool for grassland management and enhancing biodiversity.
Cultural burning partnerships	New	Develop a cultural burning partnership between the Ngunnawal community and PCS.
Ecological impacts of, and recovery after, prescribed burn "escapes"	Continuing	Understand the ecological impacts of, and recovery after, prescribed burn "escapes" at Potters Hill and the Cotter River.
Nestbox use by mammals and birds postfire	Continuing	Understand the use of nestboxes by mammals and birds postfire.
Two-spined Blackfish recovery actions	Continuing	Deliver blackfish recovery actions postfire, including habitat and genetic management.
Postfire monitoring of montane crayfish	Continuing	Undertake postfire montane crayfish monitoring and genetic analysis.

To be prioritised for delivery as resources enable

- Assessment of the impacts of road asset management (network, crossings) on biodiversity and erosion.
- Continue and expand engagement with Ngunnawal community to embed cultural burning knowledge in the ACT and promote two-way learning.

- Determine to optimal buffer strip width between terrestrial environment and waterbodies during prescribed burning.
- Exploring the efficacy of different approaches of deploying prescribed burning to protect ecological assets to inform best practice.
- Research the effects of fire suppressant chemicals on biodiversity to inform how best to apply them during fire management actions to minimise risks.
- Develop a Bogs Fire Plan detailing bushfire impact prevention strategies, emergency asset protection response and postfire management actions.
- Establish soil moisture content monitoring to assist with peat fires prediction and to guide potential management actions for prevention.

8. Water

Strategic objective: *Knowledge and evidence developed to support the maintenance of water quality and quantity into a warmer and drier future.*

Knowledge needs and gaps

- Projected scenarios for water flows under climate change and assess potential impacts on water bodies in the ACT.
- Water quality dynamics within the ACT waterways, including nutrient movements in urban ponds, wetlands, and lakes.
- Management responses to environmental flows guideline ecological triggers.
- How to include cultural flows into Murrumbidgee River management.
- Management interventions in waterways (e.g. transformation of current water bodies to wetlands, restrictions on chemical fertilisers, mandatory pre-treatment zones for stormwater runoff as part of development applications) and their efficacy at achieving environmental objectives.
- The impacts of specific human behaviours on water quality and the efficacy and cost effectiveness of possible behaviour-change interventions.
- the effectiveness of the ACT's environmental flow guidelines and potential improvements, including how to ensure needs of aquatic species and ecological communities are met.
- Interactions between terrestrial land management practices (e.g. total grazing pressure), soil processes, and water management.
- Environmental flows regimes from Tantangara Dam to improve ecosystem health in the Upper Murrumbidgee River.
- Emerging technologies to reduce pollutant load.

- Options for regional approaches to catchment management and research.

Current Projects	Status	Actions 2024-2026
ACT water vulnerability assessment	Continuing	Undertake stage 2 of the ACT water vulnerability assessment.
Restoration of urban creeks	New	Undertake re-naturalisation and restoration of urban creeks.
ACT Hydrometric Network monitoring	Continuing	Continue to monitor the ACT Hydrometric Network to track and report condition of water resources across the ACT, to ensure operation of water management infrastructure and flood warning systems, and to support water research.
ACT Water Science Plan	New	Develop an ACT Water Science Plan.
AUSRIVAS monitoring program	Continuing	Conduct the AUSRIVAS monitoring program which uses macroinvertebrates as indicators of river and waterbody health across rural and urban catchments.
ACT Lakes and Rivers Water Quality Program	Continuing	Monitor water quality in the rivers and urban lakes to track waterway condition and inform management decisions.
Waterwatch Catchment Health Indicator Program (CHIP)	Continuing	Deliver the Waterwatch Catchment Health Indicator Program (CHIP) and subsequent report as an annual assessment of the health of the waterways of the upper Murrumbidgee catchment.
Lake Tuggeranong research project	Continuing	Investigate the cause of blue-green algae blooms in Lake Tuggeranong and identification of potential sources of pollution.
Undertake Murrumbidgee fish monitoring	Continuing	Undertake Murrumbidgee fish monitoring.
Deliver stormwater behavioural change program	New	Reduce eutrophication and blue-green algae outbreaks in urban waterways.
ACT Fertiliser Use and Behaviour Research	New	Reduce fertiliser run-off.
Environmental flow impacts on Two-spined Blackfish	Continuing	Monitor transfer reach environmental flow and water supply delivery impacts on Two-spined Blackfish.
Groundwater and surface water impacts in Nadjung Mada Nature Reserve	Continuing	Investigate how development affects groundwater and surface water, and the flow on effects to conservation values in Nadjung Mada Nature Reserve.
Ngunnawal Water Assessment program	Continuing	Support the Ngunnawal Water Assessment monitoring program.
Upper Murrumbidgee River restoration program	New	Deliver the Upper Murrumbidgee River restoration program.
Conduct Tuggeranong catchment streamflow monitoring	New	Conduct Tuggeranong catchment streamflow monitoring.
Analyse data on surface permeability within urban footprint to inform urban planning	New	Analyse data on surface permeability within urban footprint to inform urban planning.

To be prioritised for delivery as resources enable

- Increase our understanding of the impacts of proximate development and construction on water quality and biodiversity.
- Improve our knowledge of the impacts silver and other elements in waterways.
- Investigate the impact of rain gardens on urban trees.

9. Soils

Strategic objective: *Knowledge and evidence developed to maintain and improve soil quality into a warmer and drier future through management interventions.*

Knowledge needs and gaps

- Impacts on soil quality, soil moisture, hydrology, erosion and nutrient cycling under a warming and drying climate and assess implications for agricultural productivity and ecosystem function.
- Soil condition on rural lands, and its response to drought, compares to soils on conservation estate.
- Soil chemistry and microbial diversity across ACT landscapes.
- Areas and soil types that can benefit the most from conservation and management interventions.
- Effective management interventions to preserve and improve soil quality and productivity, including under hotter and drier conditions.
- Optimal management practices to prevent or restore areas of significant soil erosion, nutrification, or contamination.

Current Projects	Status	Actions 2024-2026
Dung beetle introductions	New	Undertake dung beetle introduction to improve condition of solid on rural lands.
Implementing the national soils action plan	New	Implement the national soils action plan, targeting education of land managers to encourage best practice soil management and improve soil health.
Climate smart farming	New	Deliver the climate smart farming program, maintaining soil health under climate change.
Mapping soil chemistry across reserve estate	Continuing	Continue the collection of soil chemistry data within Canberra Nature Park and Offsets, with the intention to map soil chemistry across reserve estate.
The influence of microbe addition on survival of Golden Sun Moth food plants	Continuing	Evaluate the influence of microbe addition from Natural Temperate Grassland on survival of Golden Sun Moth food plants.

To be prioritised for delivery as resources enable

- Support research to improve our understanding of the influence of soil nutrient ratios on eucalyptus dieback resistance (e.g. nitrogen to magnesium).
- Support research on key soil microbiomes and their ecological functions including interactions between microbiota and soil chemistry.
- Monitor the impacts of different management interventions and regimes on soil microbiomes and carbon flux.
- Investigate the role of soil nutrient ratios in eucalyptus dieback resistance (e.g. nitrogen to magnesium).

10. Plantations, carbon, and biodiversity management

Strategic objective: *Knowledge base established for effective carbon capture in the landscape, particularly through plantations, and managing plantations to enhance biodiversity values.*

Knowledge needs and gaps

- How plantations contribute to community well-being, social, economic, and aesthetic values of Canberra's citizens and how to best manage these values.
- Impact of management approaches, such as native vegetation corridors, on biodiversity in and around pine plantations.
- How to enhance connectivity of native corridors to ensure regional linkages.
- How to effectively integrate stable carbon into soil during site preparation for forestry operations in the ACT.
- Future planting requirements and offset capacity.
- Options for aligning reforestation for carbon offsets and biodiversity conservation objectives.
- Carbon sequestration for submission to the Clean Energy Regulator for consideration for funding.

Current Projects	Status	Actions 2024-2026
Explore carbon accreditation	New	Investigate ecological restoration opportunities through carbon accreditation.
Plantations on farms	New	Explore the potential for small-scale plantations on farms.
Carbon trading knowledge broker	New	Support knowledge broker services to help farmers navigate the complex system of carbon trading.
Carbon/Biochar additions	New	Improve forest soil health through addition of Carbon/Biochar in Kowen Forest.

To be prioritised for delivery as resources enable

- Monitor the long-term effectiveness of habitat corridors through pine plantations (e.g. Ingledene Forest)
- Optimise opportunities to improve connectivity between habitat areas within plantations through best-practice connectivity modelling.

11. Ecosystem services and environmental accounting

Strategic objective: *The economic contribution of ecosystem services to the ACT is better understood, including to guide investment in the protection and management of ecosystem services, and the utility and appropriate use of environmental accounting in the ACT context is assessed.*

Knowledge needs and gaps

- Cost-benefit of ensuring water quality at source is high compared to the cost of treating water after extraction.
- The contribution of forests and woodlands to the liveability of Canberra (e.g. air quality, moderation of temperature).
- A method to provide a monetary value (and cost benefit analysis) to benefits provided by trees across their lifetime.
- Whether retention of mature trees and urban open space improves the value of adjacent blocks, and calculation of this value.
- Economic and social benefits of ACT pine plantations in balance with their impact on ecosystem services (e.g. water yield and quality).
- Benefits provided by reserves to the community (health, wellbeing and/or amenity), and gain an understanding of the mechanisms that drive this.
- Appropriate valuation methods for biodiversity in the ACT, determine how much members of the ACT community are willing to pay for conservation, and use these to inform EPSDD decision making.

Current Projects	Status	Actions 2024-2026
Explore carbon accounting	Continuing	Explore carbon accounting.