



**ACT**  
Government

Environment and Planning

# Biodiversity Research and Monitoring Program

July 2015 — June 2017



JULY 2015



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# 1. About the biodiversity research and monitoring program

## 1.1 Purpose of the biodiversity research and monitoring program

Biodiversity research and monitoring activities contribute to a better understanding of the options available for effective management and conservation of the ACT's flora, fauna and ecosystems. The purpose of the biodiversity research and monitoring program (BRAMP) is to strategically prioritise where we focus our research and monitoring efforts.

The BRAMP aims to:

- improve knowledge and understanding of how biodiversity in the ACT relates to its environment and reacts to pressures that affect its distribution, condition and survival and
- identify solutions to better manage and conserve biodiversity within this dynamic context.

Building a sound evidence base, strengthening partnerships with institutional and community stakeholders, and improving the effective use of available knowledge are important elements of this approach.

It is recognised that improving our understanding and knowledge of biodiversity issues will be an on-going process, and that it is possible to undertake research and monitoring on only some aspects of this complex and vast subject.

The BRAMP primarily supports the role of the ACT Conservator of Flora and Fauna (Conservator) by setting out the ACT Government's biodiversity research and monitoring priority activities for a specified two year period. In doing so it contributes to an evidence base for future policy, program and resource allocation decisions, and reporting.

The scope of a BRAMP, and the Conservator's role in preparing, implementing and reporting on a BRAMP, are defined by the *ACT Nature Conservation Act 2014* (NC Act).

The BRAMP 2015–17 is effective from 27 July 2015<sup>1</sup> to 30 June 2017. It builds on the large body of biodiversity research and monitoring work previously undertaken by the ACT Government.

## 1.2 Policy context

### *ACT Nature Conservation Act 2014*

#### **Object of the ACT Nature Conservation Act 2014**

The main object of the NC Act is to protect, conserve and enhance the biodiversity of the ACT. This includes the sustainable management of native flora and fauna, and their habitats; ecological communities and connectivity; and ecosystems and their processes and functions.

#### **Definition of a biodiversity research and monitoring program**

The NC Act defines a BRAMP as:

*"...a program designed to monitor the state of nature conservation generally in the ACT; and effective management of nature conservation in the ACT."*<sup>2</sup>

The NC Act defines biodiversity as:

*"...the variability among living organisms from all sources (including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part); and includes diversity within species and between species; and of ecosystems."*<sup>3</sup>

A BRAMP is a notifiable instrument under the NC Act, and is reported on and updated biennially to ensure currency and relevance.

#### **Role of the ACT Conservator of Flora and Fauna**

The main functions of the Conservator, as defined by the NC Act, are to:

- Develop and oversee policies, programs and plans for the effective management of nature conservation in the ACT. This includes broader statutory obligations such as for threatened species and ecological communities

1 The 27 July 2015 commencement date of the BRAMP 2015–17 was necessary to allow for the prior establishment of the Scientific Committee.

2 ACT Nature Conservation Act 2014, s24

3 ACT Nature Conservation Act 2014, s19



- Monitor the state of nature conservation in the ACT and
- Provide information to the ACT Commissioner for Sustainability and the Environment (Commissioner) for inclusion in a state of the environment report (SOE Report).<sup>4</sup>

The Conservator undertakes these functions through a range of policies and programs, of which the BRAMP is but one. Figure 1 depicts the broad policy and program context of the BRAMP.

In preparing a BRAMP, the Conservator must comply with current policies, consult the Scientific Committee, and consider the potential for engaging community organisations in monitoring activities.<sup>5</sup>

The Conservator may delegate implementation of any aspect of a BRAMP to a conservation officer or relevant ACT Government policy, research or program area.

### Advisory bodies

The Conservator must consult with the Scientific Committee and can seek advice from the Natural Resource Management Council and Natural Resource Management Advisory Committee for input and advice on the development of its biodiversity research and monitoring priorities.

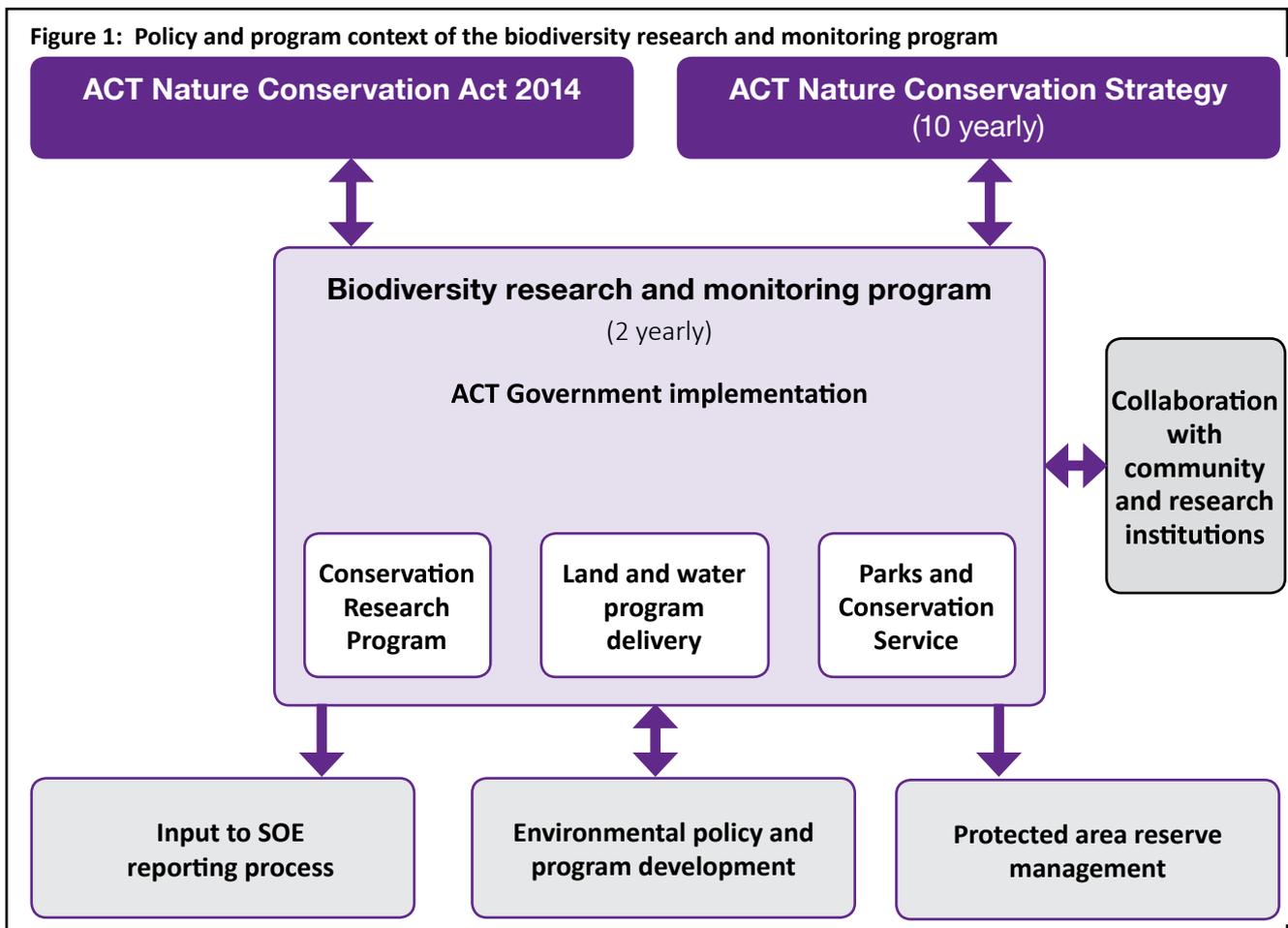
Members from all the above advisory bodies were represented in consultations on the development of the BRAMP 2015–17. Advisory bodies will continue to be consulted during the implementation of the BRAMP 2015–17 as advice and input is needed.

### Climate change

It is a requirement of the NC Act to consider climate change in the development of a nature conservation strategy and action plans for threatened species and ecosystems. This requirement also influences biodiversity research and monitoring considerations.

<sup>4</sup> ACT Nature Conservation Act 2014, s21

<sup>5</sup> ACT Nature Conservation Act 2014, s25





## ACT Nature Conservation Strategy 2013–23

The ACT Nature Conservation Strategy 2013–23 (NCS 2013–23) provides the policy context for the setting of biodiversity research and monitoring priorities.

### An ACT-wide ecosystem approach

The NCS 2013–23 establishes a whole of landscape approach for nature conservation in the ACT. This approach integrates management across different land uses and tenures to better support ecosystem processes, ecological values and landscape resilience.

### Nature Conservation Strategy 2013–23 strategies

The NCS 2013–23 includes five strategies:

Strategy 1:

Enhance habitat connectivity and ecosystem function

Strategy 2:

Manage threats to biodiversity

Strategy 3:

Protect species and ecological communities

Strategy 4:

Enhance biodiversity value of urban areas

Strategy 5:

Strengthen community engagement

Implementation of the NCS 2013–23 is through a broad spectrum of ACT Government policies and programs. The BRAMP 2015–17 contributes research and monitoring activities to support and complement this work.

## 1.3 Other influences on selection of activities in the biodiversity research and monitoring program 2015–17

### Other statutory obligations

Statutory obligations, such as for declared species and communities, have influenced the selection of BRAMP 2015–17 priority activities.

### Funding

Biodiversity research and monitoring in the ACT is supported through ACT Government funding, Australian Government program funding, linkages with institutions and collaboration with community organisations and groups. Available funding and resources, as well as monitoring and reporting obligations under some funding arrangements, have influenced the priority activities of the BRAMP 2015–17.

### Timing

As the activities identified for the BRAMP are set up to two years in advance, additional research and monitoring activities may be undertaken to support nature conservation policy or program needs as they arise.

## 1.4 Activities of the biodiversity research and monitoring program 2015–17

Table 2 lists the biodiversity research and monitoring activities identified for the period July 2015–June 2017 against strategies, 1,2,3 and 5 of the NCS 2013–23. No activities primarily relating to NCS 2013–23 strategy 4 were identified at the time of drafting. Table 1 provides an explanation of the references and acronyms used in Table 2.



**Table 1: List of references and acronyms used in Tables 2 on biodiversity research and monitoring program 2015–17 activities**

<b>Ref</b>	The reference number is not indicative of priority level. It is only to be used for reference purposes.
<b>Activity</b>	Identified action or project to be undertaken as part of the BRAMP 2015–17
<b>ACT Government (Directorates)</b>	<p><b>EPD</b> – Environment and Planning Directorate</p> <p><b>TAMSD</b> – Territory and Municipal Services Directorate</p> <p><b>ESA</b> – Emergency Services Agency</p> <p><b>CMTEDD</b> – Chief Minister, Treasury and Economic Development, includes Access Canberra</p>
<p><b>Collaboration Partners</b></p> <p>(In alphabetic order)</p> <p>Only key collaboration partners for the activities listed in this BRAMP are included. This list is not representative of all the collaboration partners with whom the ACT Government works.</p>	<p>Identifies the principal community or institutional partners involved.</p> <p><b>ANBG</b>–Australian National Botanical Gardens</p> <p><b>ANU</b> – Australian National University</p> <p><b>CGs</b> – ACT Catchment Groups (includes GCG – Ginninderra Catchment Group; MCG – Molonglo Catchment Group and SACT – Southern ACT Catchment Group)</p> <p><b>COG</b> – Canberra Ornithologists Group</p> <p><b>CSIRO</b> – Commonwealth Scientific and Industrial Research Organisation</p> <p><b>Expert Reference Groups</b> – as established under the Conservation Effectiveness Monitoring Program for each of the 8 ecosystem units</p> <p><b>FOG</b> – Friends of Grasslands groups</p> <p><b>GA</b> – Greening Australia Canberra Region</p> <p><b>IAE</b> – Institute of Applied Ecology (UC)</p> <p><b>IACRC</b> – Invasive Animal Cooperative Research Centre</p> <p><b>ICON</b> – ICON Water</p> <p><b>JHI</b> – James Hutton Institute</p> <p><b>NHCRC</b> – Natural Hazard Cooperative Research Centre</p> <p><b>NPA</b> – National Parks Association of the ACT</p> <p><b>OEH</b> – NSW Office of Environment and Heritage</p> <p><b>ParkCare</b> – Community volunteers, working with ACT Government Parks and Conservation Service, in parks and reserves</p> <p><b>SELLS</b> – NSW South East Local Land Services</p> <p><b>UC</b> – University of Canberra</p> <p><b>UMDR</b> – Upper Murrumbidgee Demonstration Reach</p>
<b>Other NCS Strategy</b>	Indicates, where applicable, non–primary NCS 2013–23 strategies towards which the activity also contributes. 1=Strategy 1; 2=Strategy 2; 3=Strategy 3; 4=Strategy 4; 5=Strategy 5. NCS 2013–23 strategies are listed on page 4.
<b>Timeframe</b>	Indicates the number of years or on–going nature of the work being undertaken. It is not limited to the period covered by the BRAMP, but overlaps with it.



**Table 2 Biodiversity research and monitoring activities for July 2015–June 2017 (continued overleaf)**

<b>Strategy 1: Enhance habitat connectivity and ecosystem function</b>					
<b>Ref</b>	<b>Activity</b>	<b>ACT Government</b>	<b>Collaboration Partners</b>	<b>Other NCS Strategy</b>	<b>Timeframe</b>
1.1	Develop condition monitoring and assessment plans for eight ecosystems (Conservation Effectiveness Monitoring Program)	TAMSD, EPD	Expert reference groups	2,3,4,5	2013–17
1.2	Map vegetation in southern Namadgi Park. (other vegetation mapping areas are pending further funding)	EPD		2,3,4	2014–17
1.3	Soil mapping and the development of hydrogeological landscape profiling	EPD		2,3	2013–17
1.4	Mulligans Flat – Goorooyarroo woodlands experiment – implementation of Australian Research Council linkage project. Includes research and monitoring on the release of Eastern Bettongs into an open environment	EPD	ANU, CSIRO, JHI	2,3,5	2014–19
1.5	Undertake reassessment of connectivity analysis	EPD		2,3,4	2015–17
1.6	Develop natural resource management adaptation pathways for grasslands, woodlands and riparian corridors	EPD	CSIRO, ParkCare, FOG	3,5	2015
1.7	Research trials on grasslands restoration (fire, rock addition, grazing)	EPD, TAMSD	Parkcare, FOG, GA	2,3,5	2013–18
1.8	Research into the use of LIDAR (remote sensing technology) for vegetation structure and habitat mapping	EPD, TAMSD	ANU, CSIRO, ACTEW	2,3	2014–18
1.9	Monitor Tharwa Engineered Log Jams (ELJs)	EPD, TAMSD	UMDR	2,3	2013–17
1.10	Monitor kangaroo movements in South Lawson (part 1)	EPD, CMTEDD		2,3	2013–17
1.11	Monitor fish community in small streams	EPD		2	2015–16
1.12	Frogwatch annual census	EPD	GCG, CGs	5	Until 2017



<b>Strategy 2: Manage threats to biodiversity</b>					
<b>Ref</b>	<b>Activity</b>	<b>ACT Government</b>	<b>Collaboration Partners</b>	<b>Other NCS Strategy</b>	<b>Timeframe</b>
2.1	Fire – Fauna response – Prescribed Burn Monitoring Program in Canberra Nature Park and Namadgi National Park. Includes habitat mapping and analysis	EPD, TAMSD		3	2013–17
2.2	Research and monitoring to support fire and fuel management (priorities to be determined)	CMTEDD, TAMSD, EPD,	NHCRC, ParkCare	3,4	2012–17
2.3	Monitor prescribed fire on fish communities	EPD, TAMSD			As required
2.4	Research on aquatic and other prescribed burn ecosystem response	EPD		4	2015–16
2.5	Research on kangaroo fertility control – includes ongoing monitoring of kangaroos treated in 2008 and research on a dart delivery method and field trials of GonaCon™	EPD, TAMSD	CSIRO, IACRC	3	2014–16
2.6	Monitor kangaroo population density	EPD, TAMSD	ParkCare, Other volunteers	3	On-going
2.7	Research on kangaroo grazing impacts	EPD		3	2013–16
2.8	Monitoring for vertebrate pest management	EPD, TAMSD	ParkCare	3	On-going
2.9	Monitor dingoes for conservation and agricultural production	TAMSD	CR	3	On-going
2.10	Monitor rabbit warren rehabilitation in Namadgi National Park	EPD, TAMSD	ParkCare, NPA	3	2014–15
2.11	Research trials on carp management	EPD	Bush Heritage, UMDR, Waterwatch	3	2015–16
2.12	Natural resource management planning framework for climate change	EPD, TAMSD, ESA		1,3,4	2013–18



### Strategy 3: Protect species and ecological communities

Ref	Activity	ACT Government	Collaboration Partners	Other NCS Strategy	Timeframe
3.1	Monitor wild populations, and undertake captive breeding program and reintroduction of the Corroboree Frog	EPD, TAMSD			On-going
3.2	Grassland Earless Dragon monitoring program	EPD	UC		2010–17
3.3	Research on germination strategies for plants in Alpine Bogs	EPD	ANBG		2014–16
3.4	Research and monitoring on biodiversity offsets – Gungahlin Strategic Assessment	EPD, TAMSD		4	2015–2020
3.5	Research on germination strategies for threatened and rare plant species	EPD	ANBG	2	2012–2016
3.6	Monitor threatened flora and fauna species (species be determined annually)	EPD	ParkCare, COG, other volunteers including through Canberra Nature Map	2	On-going
3.7	Research and monitoring into translocation options for threatened plant species (number to be determined) and monitoring of existing translocated plant populations	EPD, TAMSD	ANBG, UC, ICON Water, ANU	2	2012–20
3.8	Monitor Little Eagle sightings to understand implications for rabbit management	EPD	IAE	2	On-going
3.9	Monitor threatened fauna species to support offsets	EPD, TAMSD		1	2015–17
3.10	Monitor Grey Headed Flying Fox (and bats when required)	EPD			2015–17
3.11	Enhanced inventory of fauna in remote regions of the ACT (e.g. Namadgi National Park)	EPD, TAMSD		1,2	2015–16
3.12	Survey of Cotter River for threatened fish species (also including Trout Cod)	EPD, CMTEDD, TAMSD	ICON, UC	2	On going
3.13	Monitor Murrumbidgee fish community	EPD, TAMSD, CMTEDD	ICON, UC	2	Ongoing biennially
3.14	Survey of montane spiny crayfish (Euastacus)	EPD, TAMSD		2	2015–2016
3.15	Monitor urban lakes fish community	EPD TAMSD, CMTEDD	Angling groups	2	2015–2017
3.16	Monitor macro-invertebrates	EPD		2,4,5	



<b>Strategy 5: Strengthen community engagement</b>					
<b>Ref</b>	<b>Activity</b>	<b>ACT Government</b>	<b>Collaboration Partners</b>	<b>Other NCS Strategy</b>	<b>Timeframe</b>
5.1	Waterwatch monitoring of water quality	EPD, TAMSD	Icon Water, SELLS, CGs	3	On-going
5.2	Waterwatch monitoring of macro-invertebrate	EPD, TAMSD	Icon Water, SELLS, CGs	3	On-going
5.3	Waterwatch rapid assessment riparian condition (RARC)	EPD, TAMSD	Icon Water, SELLS, CGs	3	On-going
5.4	Manage data collected through Feral Fish Scan (community portal)	EPD	Bush Heritage, IACRC, UMDR, CGs	1, 3	On-going
5.5	Enhance field collection of data including through tools and applications such as Weedspotter, Canberra Nature Map and Collector for ArcGIS	EPD, TAMSD, CMTEDD	Community and institutional stakeholders. ACT Herpetological Society, COG, Atlas of Living Australia, ParkCare	1,2, 3, 4	On-going
5.6	Improve data collection, consolidation and delivery including through spatial tools such as ACTMapi, dataACT and ArcGIS	TAMSD, EPD	Community and institutional stakeholders	2, 3, 4	On-going



## 2. Implementation, review and reporting

The Conservator is required to implement, review, update and report on a BRAMP. Table 3 provides an indicative timeline for this cycle as it applies to the BRAMP 2015–17.

**Table 3: Timeline of the BRAMP 2015–17**

Milestone	Date
BRAMP 2015–17 start date	July 2015
Review priorities and progress draft BRAMP 2017–19	May 2017
BRAMP 2015–17 end date	30 June 2017
Release BRAMP 2017–19	1 July 2017
BRAMP 2015–17 implementation report	30 September 2017

### 2.1 Implementation of the biodiversity research and monitoring program 2015–17

#### ACT Government implementing directorates

Implementation of the BRAMP 2015–17 is the responsibility of the Conservator and is largely delegated to two ACT Government Directorates, namely Environment and Planning (EPD) and Territory and Municipal Services (TAMSD).

EPD has responsibility for environmental research, policies and programs. It conducts significant research and monitoring on biodiversity and nature conservation as part of its Conservation Research Program. This work is complemented by land and water policy and program research and monitoring projects.

TAMSD, as the primary land management agency in the ACT, monitors the effectiveness of its programs at protecting and enhancing biodiversity values within ACT nature reserves. Through its Conservation Effectiveness Monitoring Program, it also monitors and assesses the condition of ecosystem units<sup>6</sup> contained within nature reserves.

#### Collaboration with institutional and community stakeholders

The ACT Government maintains strong linkages with institutional and community stakeholders on some of its biodiversity research and monitoring activities. A key focus of the BRAMP 2015–17 is to look for more opportunities to work collaboratively on shared biodiversity research and monitoring priorities in the ACT and surrounding region.

The ACT Government values its connections with institutional stakeholders, such as the Australian National University, University of Canberra, Canberra Institute of Technology, Australian Government departments, Cooperative Research Centres, NSW Office of Environment and Heritage, the Capital Woodlands and Wetlands Trust, and CSIRO<sup>7</sup>. A number of leading Australian research institutions located in the ACT are a source of locally focussed research, partnerships in national and international research, and latest knowledge on scientific thinking, all of which are vital to improving biodiversity management.

The ACT Government also recognises the contributions that community stakeholders make towards conservation efforts in the ACT. Over the years, it has often relied on the commitment and involvement of community organisations and groups such as Parkcare, Friends of Groups, Canberra Ornithologists Group, Catchment Groups, and Waterwatch and Frogwatch volunteers, just to name a few. Without this community engagement, some of the research and monitoring activities identified in the BRAMP 2015–17 will not be realisable. Volunteers, in turn, are given an opportunity to work with conservation research and monitoring specialists in the field, and to learn more about scientific survey and monitoring methods, vegetation identification and communities, and fauna conservation and habitat.

By being transparent about its biodiversity research and monitoring priorities, as set out in the BRAMP 2015–17, the ACT Government is seeking to foster increased collaboration with institutional and community stakeholders, and improve alignment of research and monitoring efforts.

<sup>6</sup> Eight ecosystem units were identified as part of a system for classifying ACT protected area reserves (ACT Reserve Condition Monitoring report, 2014, Stevenson & Seddon)

<sup>7</sup> Commonwealth Scientific and Industrial Research Organisation



This increased collaboration has the potential to lead to more cost effective research and monitoring modalities, improvements in the quality and extent of our evidence base, increased knowledge sharing, opportunities for capacity building, and better analysis and decision-making for biodiversity outcomes. It also allows gaps in research and monitoring to be identified and considered under future resource allocation processes.

### Research and monitoring needs and methods

Methods being used for biodiversity research and monitoring range from simple qualitative to robust quantitative data collection. The choice of method reflects the decision needs, current accepted practice, and resource availability.

To apply consistent methods in monitoring natural resources across borders including for vegetation and soil, the ACT Government works closely with the NSW Office of Environment and Heritage.

As monitoring methods continue to evolve, consultation on changes or new approaches are discussed with the Scientific Committee, including through the review and development of Action Plans.

Through successive BRAMPS, the ACT Government aims to establish a strategic long-term consistent monitoring program which enables data to be collected and analysed to identify trends and changes in biodiversity, including in the face of climate change.

### Data and knowledge management

With advances in technology, the opportunities for collating, interrogating, sharing and accessing data have been strengthened. Improving knowledge management to support evidence based decision making is an important element of the BRAMP 2015–17.

Arrangements for sharing, transferring and collating data are an intrinsic part of operating in a collaborative research and monitoring environment. The use of online applications and tools, such as the ACT and Southern Tablelands Weed Spotter website, ACTMapi, Atlas of Living Australia and Canberra Nature Park Map, have increased accessibility and sharing of data. Special provisions will be made to safeguard sensitive information, for example, in relation to the location of rare flora.

## 2.2 Review of the biodiversity research and monitoring program 2015–17

Consultation and feedback received on the BRAMP 2015–17 will inform the development of the BRAMP 2017–19.

The BRAMP 2015–17 will be reviewed towards the end of its term and the BRAMP 2017–19 developed following:

- Consideration of:
  - » the current policy and program context; and
  - » available and relevant scientific, Commissioner, policy and program reports and reviews;
- Identification of research and monitoring gaps and priorities; and
- Consultation with the Scientific Committee.

The BRAMP 2015–17 will remain effective until such time as the BRAMP 2017–19 is released.

- Upon release of the BRAMP 2017–19, the BRAMP 2015–17 will cease to be in effect.

## 2.3 Reporting on the implementation of the biodiversity research and monitoring program 2015–17

The Conservator will report on the implementation of the BRAMP 2015–17 (BRAMP 2015–17 Implementation Report) to the Minister within 3 months after the date when it ceases to be effective. The BRAMP 2015–17 Implementation Report will document progress against its listed activities. Following its formal release, the BRAMP 2015–17 Implementation Report will be made publicly accessible.

BRAMP implementation reports do not replace or seek to duplicate existing policy and program reporting undertaken as part of on-going ACT Government business. They also do not seek to duplicate the Commissioner's four yearly SOE Reports.

