



**ACT**  
Government

# GUNGAHLIN STRATEGIC ASSESSMENT

PLAN REVIEW REPORT

SEPTEMBER 2018



# Gungahlin Strategic Assessment Plan Review Report

Review of the Gungahlin Strategic Assessment and Biodiversity Plan—June 2013 to June 2018

September 2018

Environment, Planning and Sustainable Development Directorate

## **Acknowledgements**

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## Definitions

Acronym	Full name
ACT	Australian Capital Territory
BGW	Box gum woodland
CEMP	Construction Environment Management Plan (interchangeable with EMP)
CMTEDD	Chief Minister, Treasury and Economic Development Directorate
DA	Development Application
DoE	Department of the Environment and Energy (Commonwealth)
ED	Economic Development (Part of CMTEDD)
EDP	Estate Development Plan
EIS	Environmental Impact Statement
EP Act	<i>Environment Protection Act 1997</i> (ACT)
EPA	Environment Protection Authority
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
EPD	Environment and Planning Directorate (previously Environment and Sustainable Development Directorate)
EPSDD	Environment, Planning and Sustainable Development Directorate (previously EPD)
GCC	Gungahlin Community Council
GSA	Gungahlin Strategic Assessment
GSM	Golden sun moth
HIP	Habitat Improvement Plan
LMA	Land Management Agreement
MNES	Matters of National Environmental Significance
NC Act	<i>Nature Conservation Act 2014</i> (ACT)
NCA	National Capital Authority
NCP	National Capital Plan
NSW	New South Wales
PALM Act	<i>Australian Capital Territory (Planning and Land Management) Act 1988</i> (Commonwealth)
PCS	Parks and Conservation Services
the Plan	Gungahlin Strategic Assessment Biodiversity Plan
PIT	Plan Implementation Team
PTWL	Pink-tailed worm-Lizard
The Report	the Gungahlin Strategic Assessment Plan Review Report
SLL	Striped legless lizard
SLA	Suburban Land Agency
SP	Superb parrot
TaMS	Territory and Municipal Services Directorate (now TCCS)
TCCS	Transport Canberra and City Services (formerly TAMS)

**Note: References to Department and Directorate names in the body of this report are accurate as at 30 September 2018.**

## Executive Summary

The Gungahlin Strategic Assessment (GSA) was an assessment under Part 10 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The GSA commenced on 2 October 2012 and was approved on 17 July 2013.

The GSA assessed the potential impacts from development of Gungahlin on Matters of National Environmental Significance (MNES) protected under the EPBC Act. The GSA established a broad range of commitments, under the Gungahlin Strategic Assessment Biodiversity Plan (the Plan), to be delivered by the ACT Government over 30 years.

Over the past five years, the ACT Government has implemented commitments of the Plan, in order to avoid and mitigate environmental impacts resulting from development in Gungahlin.

Key achievements that have been made during this time include:

- delivery of residential and mixed use development in multiple suburbs
- establishing conservation areas in Gorooyaroo and the Mulligans Flat Nature Reserve
- administrative process improvements for the delivery of the GSA
- research on protected matters undertaken in partnership with research institutions
- consultation and community engagement across a variety of external stakeholders.

The GSA requires a Plan Review Report (the Report) to be prepared every four years from endorsement of the Plan. The Report provides findings on actions undertaken, improvements to MNES, legislation and policy changes, and knowledge gained during this period. The Report also considers issues and challenges that have arisen and opportunities for improvements to deliver the Plan.

It is noted this is the first Report over the 20 year timeframe of the GSA. As the GSA has only just commenced and there is limited information available to comment on all commitments at this point in time. It is anticipated that as the GSA progresses and more information on the delivery of commitments becomes available and this information will be captured in future Reports.

The Report concludes with a number of recommendations for improving the delivery of commitments in the future, and the ACT Government will continue to work with the Commonwealth Government to deliver these recommendations. The Report is the first of its kind in Australia and also provides recommendations to inform the development of future strategic assessments.

## 1. Introduction

### Background to the strategic assessment

On 2 October 2012, the ACT and Commonwealth Governments commenced a strategic assessment under Part 10 of the EPBC Act. The focus of the strategic assessment was to assess the potential impacts on MNES protected under the EPBC Act resulting from development of the remaining identified greenfield sites in Gungahlin, the northern-most district in the ACT.

The Plan was endorsed on 20 June 2013 under the EPBC Act, and the actions associated with the development of Gungahlin were approved on 17 July 2013. As a result of the approval, the Plan has resulted in the establishment and management of a consolidated offsets package. The Plan has also streamlined the development process by removing the need for site by site assessment of MNES in the strategic assessment area. The MNES included in the plan are:

- Box gum woodland (BGW)
- Golden sun moth (GSM)
- Superb parrot (SP)
- Striped legless lizard (SLL)
- Pink-tailed worm-lizard (PTWL).

The Plan is relevant to the following areas as they appear in the Territory Plan:

- urban development areas of Kenny, Throsby, Moncrieff, Jacka (north) and Taylor
- urban development areas currently zoned Commercial (CZ2) and Mixed Use (CZ5) in the Gungahlin Town Centre (East)
- conservation areas, including broad-acre areas, being additions to Goorooyarroo and Mulligans Flat Nature Reserve, Kenny Nature Reserve, Horse Park North broad-acre, Kenny broad-acre and Kinlyside Nature Reserve. (Please refer to Figure 1—The Gungahlin Strategic Assessment area).

The Plan outlines actions required to facilitate development and actions required to avoid, mitigate and offset the impacts of development. These actions are implemented through a range of commitments that cover the planning, reporting, conservation and financial requirements of the Plan.

## The Plan Review Report

Commitment 15 of the Plan requires the Plan Implementation Team (PIT) to prepare and submit the Report every four years from endorsement of the Plan.

The Plan identifies that five Reports will be prepared over the 20 year life of the Plan. In 2033 the final Report will provide an overview of the entire Plan implementation, including:

- a consolidated description of the Plan
- knowledge gained and lessons learned
- future management requirements
- opportunities for enhancement of MNES beyond the life of the Plan.

It is envisaged that this will ensure that once the PIT is disbanded and responsibility for ongoing management is devolved to the appropriate ACT Government entity, knowledge of the Plan will not be lost.

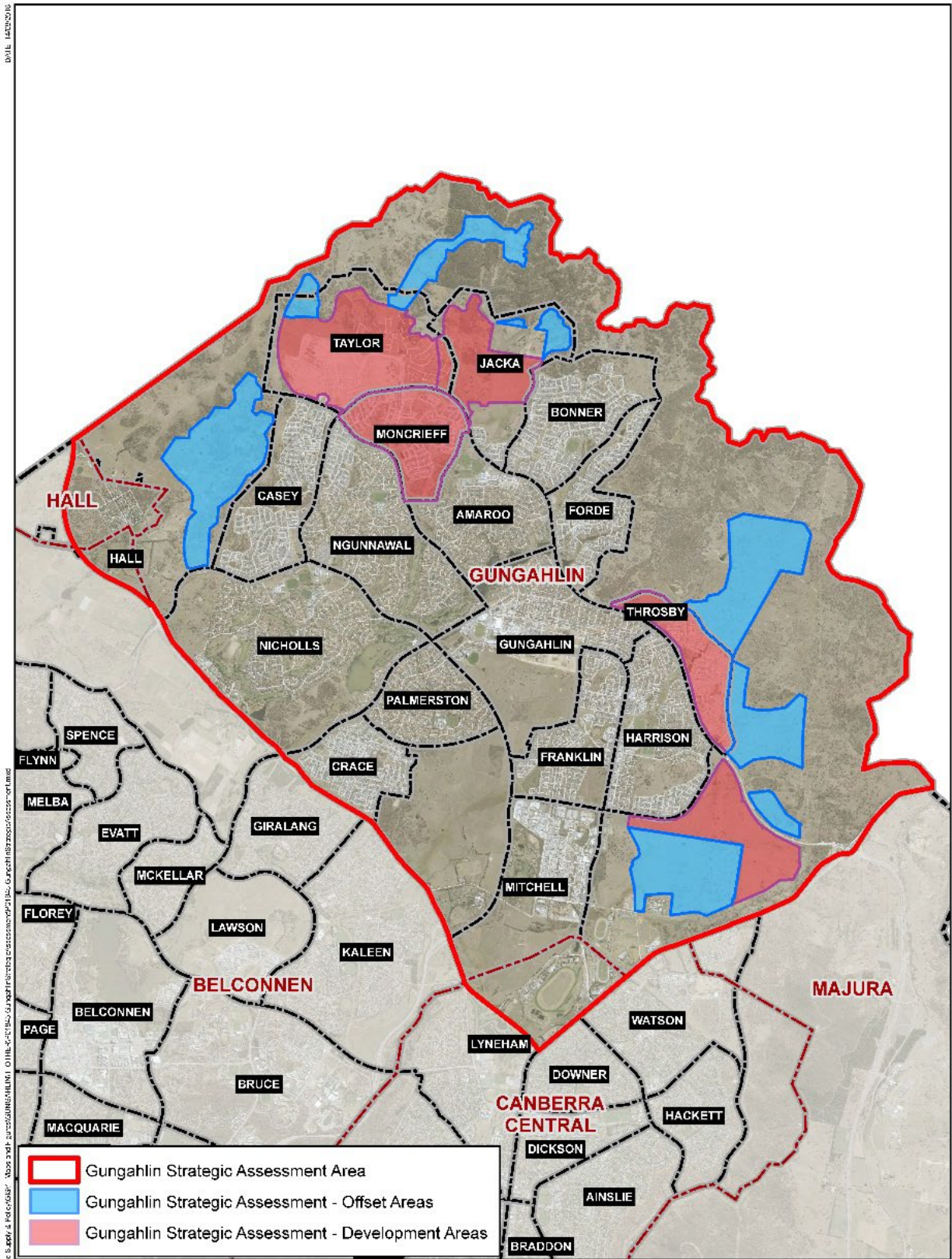


Figure 1 - The Gungahlin Strategic Assessment area

## Purpose of the Plan Review Report

In accordance with the requirements of Commitment 15 of the Plan, this Report is a comprehensive review on the activities related to the GSA from commencement of the Plan. On 6 July 2018 the Commonwealth Government granted an extension to the timeframe for delivering the Report. Therefore the Report will cover the preceding five years of implementation from 20 June 2013 until 20 June 2018.

The purpose of the Report is to summarise progress over the preceding five years in achieving the conservation gains against the objectives outlined in the Plan. The review identifies the knowledge gained through implementation of the Plan and considers consistency with action plans, policy and legislation by review of these guiding documents.

The Plan requires the following items to be considered in the Report:

- a summary of matters reported including actions undertaken, improvements to MNES habitat, research findings and other issues as relevant, over the preceding four years as reported in the annual reports for that period
- legislative or policy changes during the period that potentially affect actions under the Plan
- any change in focus the Plan needs to adopt in order to take into account knowledge gained through the Plan implementation or new knowledge from other sources relevant to the protected matters in the context of Gungahlin; and
- recommendations for amending programs under the Plan in order to achieve greater efficiency and or effectiveness in meeting the Plan's objectives.

The annual reporting requirements which coincide with the Report have been incorporated into this document in order to minimise duplication. Please find the 2017 - 2018 Annual Report attached at [Appendix A](#).

The Report provides findings on the majority of items required under the Plan. Notwithstanding, this is the first Report over the 20 year timeframe of the GSA. As such, it is too early in the implementation and delivery of the GSA to provide findings on all of the items required under the Plan. It has been noted in the relevant sections of the Report where findings cannot be made on specific items. It is anticipated that future Reports will be able to provide findings on all items required by the Plan as the GSA progresses throughout its lifespan.

## 2. Key achievements

This section outlines key achievements over the preceding five years.

### Delivery of urban development areas

Urban development in the GSA area has been carried out through a streamlined process in accordance with the requirements of the Plan.

A summary of the urban development that has been undertaken over the past five years is provided below:

- Throsby—dwelling construction is underway and some residences are occupied
- Moncrieff—the majority of residential development is complete and residences occupied
- Gungahlin Town Centre East—construction has commenced and is anticipated to be completed in November 2018. Sales and subsequent construction on blocks will occur over the next 15 years
- Taylor Stages 1 and 2—dwelling construction commenced in October 2017. The first residents started moving into their homes in early 2018, with first occupation in early 2018.
- Taylor 2—civil works commenced in April 2018. The first residents are anticipated to move into their homes in late 2018.

During the 2016–17 financial year The ACT Government released 955 residential dwelling sites, 11,209m<sup>2</sup> of commercial and mixed use land and a 4.5 hectare site for a government primary school (Taylor) in the strategic assessment area.

The land release outcomes for the 2017 - 2018 financial year include:

- 606 residential dwelling sites
- 10,900m<sup>2</sup> of mixed-use land
- 59,981m<sup>2</sup> of community and non-urban land.

A full update on the delivery of development areas for 2017 - 2018 is provided in the attached 2017 - 2018 Annual Report at [Appendix A](#).

### Establishment and management of conservation areas

Implementation of the GSA has resulted in an additional 589 hectares of land being protected in the ACT by establishing (or extending) the following nature reserves:

- Kinlyside
- Mulligans Flat
- Goorooyaroo.

Following the creation of these reserves, Offset Management Plans have been prepared for the Kinlyside Nature Reserve and the extension of Mulligans Flat and Goorooyaroo Nature Reserves.

Specific ecological restoration and management programs that have been undertaken within conservation areas as a result of the GSA include:

- undertaking pest plant and animal control programs
- strategic grazing to manage the grassy understory and habitat GSM

- revegetation to improve wildlife habitat connectivity
- erosion control program at Halls Creek.

### Process improvements

Since the GSA was approved, the ACT Government has completed the following administrative process improvements for delivering the Plan:

- developing procedure documents for Construction Environmental Management Plans (CEMPS)
- developing procedure documents for reporting breaches in the GSA
- changes to the structure and efficiency of annual reporting
- adopting a centralised administration system, including the filing, storage and sharing of information
- enhanced communication and coordination across government (including the PIT and GSA working group).

The ACT Government will continue to develop process improvements as identified for the efficient delivery of the Plan and achievement of strategic objectives.

### Research and development

The GSA has provided the opportunity for the ACT Government to undertake research and enhance the knowledge of the ecology and management of MNES. The ACT Government has also invested in developing internal knowledge and capacity to achieve the strategic objectives and conservation outcomes of the Plan. The research and development achievements include:

- In 2016–2017 funding was provided for ecologists to join the offsets team in order to build biodiversity and conservation knowledge and skills within government. Bringing ecologists into the offsets team has enhanced knowledge of adaptive management principles and improved the delivery of monitoring, research and reporting. Ecologists also play an important role in supporting the rangers who conduct the on-ground actions required to meet the Plan conservation goals and commitments.
- The ACT Government has partnered with research institutions to deliver ongoing SP research. The research has enhanced the understanding of critical breeding resources for the SP. The research will assist with identifying additional and future breeding locations and improve urban tree planting to promote SP foraging, and nest competitor mitigation strategies.
- In 2016 research and monitoring into the translocation of the GSM commenced with two innovative translocation methods (soil translocation and direct translocation) conducted in Taylor. Monitoring of the effectiveness of this research is continuing and will assist to determine the effectiveness of the translocation in establishing new, or augmenting existing, populations.



*Figure 2. Superb parrots: Source Dr Laura Rayner*

### Community engagement

The GSA has provided an opportunity for community engagement programs which are important for enhancing public knowledge of environmental values.

The Woodland and Wetlands Trust operates Twilight Tours at the Mulligans Flat Woodlands and Wetlands Sanctuary. Participants are taken on a guided walk around the sanctuary to learn about the conservation values and management actions undertaken at the sanctuary. The tours are popular with residents and visitors in the ACT and have received positive feedback.



*Figure 3. Visitors attending a Twilight Tour at Mulligans Flat Sanctuary: Source Woodlands and Wetlands Trust*

Other community engagement activities undertaken at the sanctuary include:

- meetings and community events undertaken in partnership with the Throsby Mingle Community Group
- school education programs, undertaken at the sanctuary and through offsite visits to schools across the ACT.

The community events in Throsby have received positive feedback from new residents as they provide valuable opportunities for community building in a newly established suburb. A new education and engagement centre is also proposed to be developed at the sanctuary. The centre will build on existing positive community education and engagement programs and enhance community knowledge of protected matters and ecological values.

### 3. Matters of National Environmental Significance

#### Ecological Monitoring

The principal commitment under the Plan is to maintain or improve MNES values in the conservation areas (avoidance and offset areas). Ecological monitoring of the conservation areas was undertaken in 2014 and 2016. While it is noted that it is too early to report on any significant changes to MNES values within the conservation areas, a summary of findings from the ecological monitoring is provided below.

#### Kinlyside site quality

At Kinlyside, management activities including erosion control works, tree plantings, weed control, reductions in stocking rates and resting of grazing paddocks with nearby grazing leases have qualitatively maintained site values and potentially improved BGW condition.

Monitoring data collected in 2014 and 2016 suggests that, for most floristic richness measures, site quality has been maintained. No significant difference was observed between 2014 and 2016 in the richness of common species, native species or indicator species. Similarly, no significant difference was observed for floristic value scores. Average Kinlyside site condition remains high-to-very high (Rehwinkel, 2015) despite considerable variability in condition across the site (2014 FVS: 0 to 48; 2016 FVS: 2.14 to 43).

It is important to note that a significant increase in exotic species richness was observed at Kinlyside between 2014 and 2016. Further monitoring is required to confirm and investigate reasons for this increase, and future management may consider targeting a greater diversity of weed species in weed spraying programs at Kinlyside.

It is also important to note that while mapping from 2017 is broadly consistent with previous mapping by Ecological (2011), the woodland and derived grasslands in the west of the site were originally identified as BGW, but have subsequently been remapped as red stringybark communities.

#### Throsby North, Throsby East and Kenny Broadacre site quality

At Throsby North, Throsby East and Kenny Broadacre, management activities including erosion control works, tree plantings, and grazing management have qualitatively maintained site values.

Monitoring data collected in 2014 and 2016 suggests that, for most floristic richness measures, site quality has been maintained. No significant difference was observed between 2014 and 2016 in the richness of exotic species, indicator species or native species. A significant increase in floristic value score across Throsby was observed, but site quality remains low according to Rehwinkel (2015). A decline in common species richness was observed between 2014 and 2016. Further monitoring is required to confirm and explore potential reasons for this decline.

The following observations were made in regard to mapping at Throsby, Throsby East and Kenny Broadacre:

- Mapping from 2017 at Throsby North is broadly consistent with the mapping by Ecological (2011).
- Mapping from 2017 at Throsby East is inconsistent with original mapping by Ecological (2011) which will affect future management and may impact on ability to achieve site-specific offset commitments. In particular, EcoLogical mapped most of Throsby East as EPBC-quality BGW (i.e. both structural woodland areas and derived grassland areas), while Capital Ecology (2018) mapped only areas containing structural woodland as EPBC quality. In addition, northern areas of Throsby East were originally mapped as red stringybark communities, whereas Capital Ecology mapped these same areas as low diversity BGW.

- Mapping from 2017 at Kenny Broadacre is inconsistent with original mapping by Ecological (2011). While both Capital Ecology (2018) and Ecological (2011) identified a small patch of EPBC-quality BGW at the centre of Kenny Broadacre, Ecological (2011) mapped most of the site as BGW community while Capital Ecology (2018) mapped approximately 30% of the site as red stringybark community.

The inconsistencies in mapping at Throsby East and Kenny Broadacre have implications for future management. At Throsby East, additional investment in improving understorey diversity may be required, in order to achieve commitments related to improving non-EPBC woodland to EPBC woodland status. This investment was not originally anticipated at commencement of the GSA.

### Kenny site quality

At Kenny, monitoring and mapping of BGW was undertaken in 2014 and 2016. Monitoring data collected in 2014 and 2016 suggests that, for most floristic richness measures, site quality has been maintained. No significant difference was observed between 2014 and 2016 in the richness of exotic species, indicator species or native species.

A significant increase in floristic value score across Kenny was observed. This increase equates with a shift from low to moderate-to-high average site quality (Rehwinkel 2015), but 5 of 8 monitoring plots in the eastern half of the BGW patch remain in low condition. Importantly, a significant decline in common species richness was observed between 2014 and 2016. Further monitoring is required to confirm and explore potential reasons for this decline, and implications for BGW condition.

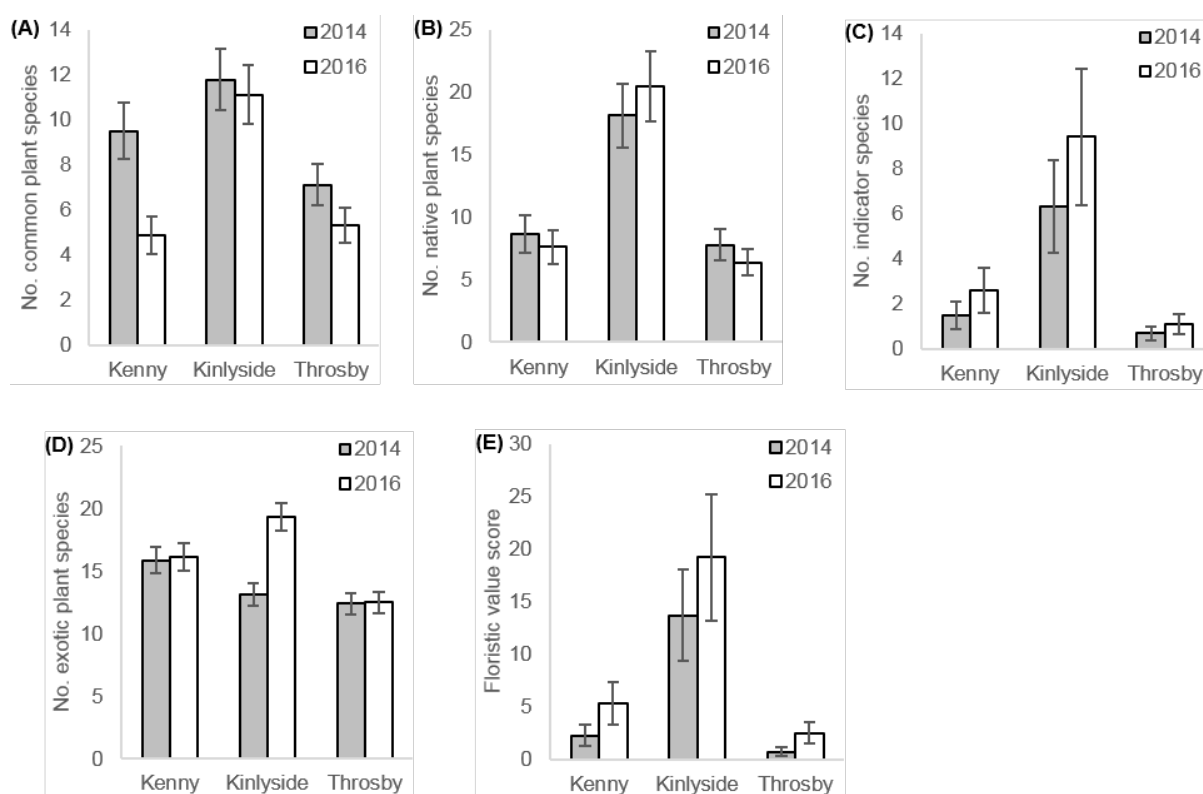


Figure 4. Average (A) common plant richness, (B) native plant richness, (C) indicator species richness, (D) exotic plant richness and (E) floristic value scores ( $\pm$  standard error) recorded at Kenny, Kinlyside and Throsby offsets in 2014 and 2016.

### Box-gum woodland site quality

Due to the short period of monitoring (i.e. two monitoring events over three years), eliciting a pattern of change in the ecosystem (or individual monitoring variables) is not currently possible. Monitoring data to date indicates that variation in the ecosystem (both positive and negative) is being captured. This variability is unlikely to be due to management intervention in most cases, and is more likely due to seasonality. ACT Government ecologists will collate remotely-sensed

environmental variables (e.g. rainfall, topography) for inclusion in future analyses to explore the influence of seasonality and environment versus management actions on patterns of ecosystem change.

Due to the recently revised vegetation maps, an assessment of the extent of both ACT and EPBC BGW will be undertaken. This will assist in identifying where management actions are required to ensure the BGW condition improvement commitments in the GSA are achieved. Documentation for managing values and offsets will need to be updated to reflect these changes.

In addition, Capital Ecology (2018) mapped the woodland condition in 2017, and recommended the following actions be undertaken as a priority to ensure BGW values are to be maintained:

- Decreasing stocking rates at Kinlyside, during spring and year-round in areas of lower understorey diversity (southern areas of Kinlyside) may aid in improving floristic diversity and promoting the health and regeneration of the understorey.
- Stocking rates at Throsby, and Kenny Broadacre, should be controlled in a way that maximises natural overstorey regeneration, but also maintains appropriate herbage mass in Phalaris-dominated areas. In addition, control of Serrated Tussock must continue at both sites, as well as control of additional weeds (Paterson's Curse, Briar Rose, St John's Wort) to prevent their spread.
- At Kenny undertake Serrated Tussock control and biodiversity-sensitive grazing management which may include resting paddocks during spring flowering season..

These actions are being implemented progressively and will continue following the formalisation of Kenny as an offset area. These actions can be further supported by policy development for the management of conservation areas on rural leases.

#### Golden sun moth

The Plan requires no net reduction in the known extent of retained and reserved populations of GSM and the improvement of 140 ha of GSM habitat. The GSM Habitat Improvement Plan (HIP) notes this will be achieved by:

- maintaining/increasing cover of native C3 grasses between 40-75%
- maintaining between 1-5% bare ground amongst grass cover
- maintaining tree/sapling/shrub cover below 10%.

At Kinlyside, monitoring of GSM habitat in improvement areas indicates that:

- Wallaby Grass and Spear Grass cover ranged from 1-13% in 2016 (this data was not collected in 2014)
- perennial native grass cover ranged from 36-67% in 2014 and decreased to 15-55% in 2016
- cover of other native plant species ranged from 0-2% in 2014 and from 0-9% in 2016
- bare ground ranged from 0-11% in 2014 and from 0-7% in 2016
- Chilean Needle Grass and Serrated Tussock were not detected on transects in 2014 or 2016
- perennial exotic grass cover ranged from 0-24% in 2014 and from 0-2% in 2016
- annual exotic grass cover ranged from 15-39% in 2014 and from 2-17% in 2016
- exotic forb cover ranged from 3-42% in 2014 and from 7-47% in 2016.

At Throsby, monitoring of GSM habitat in improvement areas indicates that:

- Wallaby Grass and Spear Grass cover ranged from 0-51% in 2016 (this data was not collected in 2014)
- perennial native grass cover ranged from 15-51% in 2014 and from 0-38% in 2016
- cover of other native plant species ranged from 0-9% in 2014 and from 0-9% in 2016
- no bare ground was detected in 2014 but ranged from 0-3% in 2016
- Chilean Needle Grass and Serrated Tussock were not detected on transects in 2014 or 2016
- perennial exotic grass cover ranged from 0-12% in 2014 and from 0-40% in 2016
- annual exotic grass cover ranged from 53-76% in 2014 and from 0-35% in 2016
- exotic forb cover ranged from 13-56% in 2014 and from 6-64% in 2016.

The monitoring data indicates that bare ground fluctuates around the thresholds stipulated in HIP.

With regards to C3 feed species, cover at Throsby is close to the minimum threshold of 40%. It is possible that if the cover of all C3 grasses had been recorded, many sites would fall within thresholds stipulated in the HIP. In contrast, cover of C3 feed species at Kinlyside is well below the minimum threshold of 40%. This will be monitored and subject to further investigation.

While exotic cover has generally declined at Kinlyside and Throsby (with the exception of exotic forbs), cover remains at about the 5% threshold outlined in the HIP. Weed control should continue at these sites to enhance GSM habitat, with a particular focus on the control of exotic forbs.

The monitoring undertaken in 2014 and 2016 did not document all necessary variables to inform progress against thresholds outlined in the HIP. Data on tree cover, sapling cover and shrub cover were not recorded in 2014 or 2016, so we are unable to assess habitat quality against the final threshold stipulated in the HIP.

It is recommended that implementation within GSM habitat should continue to maintain bare ground (grazing and/or weed control), but consideration of additional methods (e.g. fuel reduction burn) to further open the grassland structure from 0% to ~5% to improve GSM habitat should be made where practicable (as per Table 2 in the HIP).

Over the next cycle of the GSA, management actions should focus on implementing actions to improve cover of C3 grasses (particularly at Kinlyside) through conservation-sensitive grazing and weed/exotic grass control (or other actions as outlined in the HIP). Where exotic cover and bare ground are within thresholds but C3 grasses are below threshold, new strategies—such as a combination of fencing and active planting—could be considered if appropriate and feasible.

In addition, it is noted that future monitoring must:

- record total C3 grass cover (rather than solely Wallaby Grass and Spear Grass feed plants) to measure progress against the native C3 thresholds outlined in the HIP
- record the cover of trees, saplings and shrubs must to measure progress against the tree/understorey cover thresholds outlined in the HIP.

The ACT Government is currently finalising a revised monitoring program, outlined in the Managed MNES Ecological Monitoring and Research Plan (in preparation), which will be implemented for the spring 2018 ecological surveys.

## 4. Review of commitments

A review of commitments within the Plan has been completed in order to provide an overview of the progress of the Plan. The following review only considers commitments where issues and opportunities have been identified for the previous five years. A detailed update on the status of each commitment is provided in the 2017 - 2018 Annual Report provided at [Appendix A](#).

The following discussion of commitments is organised in line with the structure of the Plan as follows:

- planning commitments
- reporting commitments
- conservation commitments
- financial commitments.

It is noted the GSA is in the early stages of its 20 year timeframe. As such, findings on some commitments cannot be made as the information to evaluate the progress of these commitments is not yet available. Therefore, the commitments discussed in future reports may change depending on the information available and the issues and opportunities that arise during future implementation and operation of the GSA.

### Planning commitments

The key issue regarding planning commitments related to Land Management Agreements (LMA).

#### Land Management Agreements

Commitment 4: Review and update Land Management Agreements (LMA) or management plans for all avoided areas of NUZ3—Hills, Ridges and Buffers to ensure consistency with, and application of commitments of the Plan. As a part of this action, baseline condition assessment of all avoided areas including NUZ3 will be undertaken and LMAs will include conditions for compliance and enforcement.

LMAs are used to manage ecological values within offset areas on rural leases. LMAs have been used within the GSA to help government meet strategic objectives and deliver commitments. The requirements for LMAs are set out in section 283 of the PD Act. LMAs set out the responsibilities of the rural lease holder and the legislative requirements for land managers. It is noted that LMAs are required for all rural leases, including those located in reserves across the ACT, not just within strategic assessment areas.

#### Issues

- LMAs can be developed retrospectively to include offset commitments. Despite this, there have been delays in updating LMAs to include offset commitments and this presents a challenge to manage values and deliver commitments.
- LMAs are private documents (currently a spatial map with multiple attached documents—developed between the ACT Government and a rural lessee) which are not readily accessible to other stakeholders (i.e. the land manager, contractors, etc). The inaccessibility of these documents could potentially prevent other stakeholders from understanding and implementing conservation outcomes required by the LMA.
- Interpretation of commitments contained within the Plan has been a challenge for developing and implementing LMAs. It has been noted that stakeholders involved in developing LMAs and carrying out on-ground actions can have different interpretations of what a commitment intends to achieve and the actions that need to be undertaken to

deliver commitments. This can lead to actions being included in an LMA that may not directly meet the requirements of commitments that need to be implemented and achieved under the Plan.

- Parks and Conservation Service team within the Environment, Planning and Sustainable Development Directorate (EPSDD) are responsible for overseeing and implementing LMAs. However, Access Canberra is responsible for enforcing breaches to LMAs. The involvement of two different government agencies can result in complexities for undertaking compliance action and can limit opportunities for enforcing conditions.
- The mechanisms to ensure compliance with the conditions set out in LMA's require further investigation.
- When a rural lease is transferred to another lessee the existing LMA is no longer valid and a new LMA needs to be put in place. This results in additional administrative requirements for government and may impact on the management and protection of ecological values while the new LMA is being finalised (whether there are offset requirements or not).
- Currently, there is a high volume of LMAs that need to be reviewed by the ACT Government. The review of LMAs has been prioritised in order of urgency with high risk areas resolved first i.e. locations subject to bushfire.
- Additional policy is required to improve how the ACT Government can engage rural landholders to manage conservation values within offset areas. This should include options for payments to manage the values and assist the government deliver on the offset commitments. Investigations into stewardship programs in other jurisdictions would assist the government develop suitable policy and associated programs. A lack of policy support has made it challenging to engage and appropriately remunerate rural lessees for works undertaken to manage the land in order to achieve offset commitments.

### **Opportunities**

- Consultation with land managers should occur in the early stages of development of future strategic assessments to ensure that potential conflicts between agricultural activities and offset commitments are resolved.
- Develop LMAs with specific and detailed information about offsets and commitments that need to be met as part of strategic assessments. This could be achieved by including specific actions that need to be undertaken to achieve outcomes that are required under the strategic assessment. Notwithstanding, LMAs also need a level of flexibility to include evidence-based land management (based on results from the monitoring program) and achieve adaptive management principles.
- Investigate lease arrangements for LMAs (including the three month withdrawal clause for 99 year leases in reserve areas) and consider improvements that can be made to achieve commitments.
- Ensure LMA documents are easy for the lessee to use and understand.
- Ensure work requirements in LMAs align with government reporting timeframes for effective project management.
- Investigate if it is possible for LMAs to remain current during a rural lease transfer.

### **Management commitments**

The key issues associated with management commitments related to:

- Reserve Management Plans (RMP)

- Collection of baseline ecological information.

## Reserve Management Plans

**Commitment 9: Develop a Reserve Management Plan for all new nature reserves in order to provide for adaptive management and condition improvement of the reserve in accordance with the objectives and commitments of the Plan.**

RMPs also called Offset Management Plans have been beneficial in helping the ACT Government to achieve strategic directions and commitments of the Plan. A RMP was developed for each offset area. Each plan was written with the aim of capturing the commitments outlined in the GSA Plan and within each HIP that were specific to each offset area and guiding on-ground management to deliver these commitments.

### Issues

- The maps used within the RMPs to inform land management actions were based on information from the GSA Plan and HIPs. As discussed in the Ecological Monitoring section of this Report, errors in the original mapping for the GSA resulted in discrepancies in the location and extent of ecological communities and habitats. This made achieving specific targets set out in the RMP's difficult.
- Some actions in the RMPs are too prescriptive and lack the flexibility to achieve specific commitments.
- The definition of certain MNES condition states within the GSA Plan (i.e. BGW is defined through a qualitative measure as 'good and medium quality') were used to inform the RMPs. These qualitative measures do not provide enough information for the RMP to inform restoration planning for improving MNES state conditions.
- RMPs with more than one protected matter require further information and clarification as management actions for each matter may differ. When a specific area has more than one protected matter, there may be challenges to achieve quantitative targets for each matter.
- The development, implementation and monitoring set out in RMPs requires a high level of resourcing. It is easy to underestimate the difficulty and resources required, especially to undertake the restoration activities required to improve the condition of ecological communities or habitat of threatened species.

### Opportunities

- EPSDD is developing Biomass Management Guidelines to assist land managers achieve commitments. The guidelines are based on the most up to date evidence and expected to be completed in 2018. Once complete, the guidelines will provide a single point of reference for appropriate biomass levels and can be used to inform RMPs.
- When there are multiple protected matters in a specific area, management should be integrated and focus on overall improvement, rather than specific targets for each protected matter. Future conditions in strategic assessments (which inform RMPs) should be developed collaboratively between planners, ecologists, parks rangers and other ACT Government staff to ensure targets are achievable and delivered using methods based on adaptive management principles.
- RMPs should include clear definitions of terms and how to achieve qualitative conditions, i.e. what is considered to be an 'improvement' and specific details for categories of 'good' or 'medium' quality habitat. Such definitions could also be included in HIPs or other overarching framework documents.

- Future RMPs will be based on new maps showing the actual extent of habitat or community based on on-ground surveys.

#### Collection of ecological information

#### Commitment 13: Collection of baseline ecological information for all new reserve areas.

Baseline ecological information for all new areas has been collected. Monitoring methodologies and guidance are detailed in the relevant HIPs, submitted following GSA approval. The HIPs also showed which matter of MNES will be given management priority in particular areas.

#### Issues

- Consultant reports have established different baseline plots and different scores for data collection. Inconsistencies across the different consultants means that integrity of temporal data is compromised, and requires greater effort to seek: compromise between methods used; location of plots to yield most useful ecological information; and maintaining the length of the ecological time series.

#### Opportunities

- Commitments need to recognise that ecology isn't static and be developed with appropriate flexibility and adaptive management principles to deal with changes mentioned above.
- A new procedure for monitoring ecological data will be implemented within the 2018 survey season. This will provide standard methodologies and processes for collecting ecological data.
- Where methodologies have changed, processes have been developed to ensure that information can be compared across years and monitoring locations.
- Ensure that the baseline ecological data that is collected and reported on considers broader land management activities across offset sites and the ACT.

#### Commitment 14: Ongoing collection of key ecological information for monitoring and reporting requirements.

The strategic assessment funding has provided an opportunity for ACT Government to undertake ongoing collection of ecological information.

#### Issues

- The MNES monitoring program has predominantly been delivered by external consultants. This has not proven to be cost or time effective. An increase in internal resourcing (qualified ecologists) to conduct in-house monitoring and reporting and reduce the reliance on consultants would improve outcomes (for both the delivery of the monitoring program and from diversifying the skills within the offsets team). Establishing clear habitat quality thresholds for all protected matters would assist to inform ACT Government actions related to clearance, monitoring and achieving quality improvement targets.

#### Opportunities

- Since the commencement of the GSA, measures have been undertaken to improve the delivery of the MNES monitoring program. From 2018 monitoring and reporting on ecological information will predominantly be delivered in-house by qualified ecologists (previously delivered by consultants). Parks and Conservation Services (PCS) has engaged highly qualified and skilled staff to develop monitoring methods and systems of analysis and evaluation to inform future management of offset sites towards delivering the relevant

performance targets. These systems will provide additional benefits for EPSDD, supporting the implementation of the Conservation Effectiveness Monitoring Program, which will ultimately assist PCS to test how effectively the natural values are being managed within the reserve system.

- Engaging ecologists has increased the skill set within the offsets team and within PCS, benefiting both offsets planners and on-ground practitioners and improving the capacity of the organisation to deliver a program based on adaptive management principles.
- Future strategic assessments should adopt consistent monitoring and condition measures across all offset sites and other reserves where possible.
- Need to recognise that short-term monitoring and research projects that inform management may require more flexibility for collecting data in order to provide meaningful ecological data that answers specific management questions.

### Reporting commitments

The key issues relating to reporting commitments in the Plan include:

- preparation of the annual reports for the GSA
- the independent audit of the GSA
- preparation of the Report.

Issues and opportunities associated with the preparation of the annual reports and the Report are outlined below. A discussion on the independent audit of the GSA is provided in Section 5 of this report.

### Preparation of reports by ACT Government

**Commitment 16: Prepare and submit Annual Reports (n=20). Highlighting the implementation of the actions and relevant conservation outcomes for MNES. All reports, in addition to any research related to the Plan will be published on the internet in a central location.**

Annual reports have been prepared and submitted to the Commonwealth as required under the Plan, since the approval of the GSA. The following issues and opportunities were identified with the preparation of annual reports.

#### Issues

- The timing and late delivery of annual reports has been identified in the independent audit of the GSA as a risk to achieving commitments.
- It has been difficult to incorporate findings of ecological surveys as timeframes for ecological monitoring and reporting do not align with the administrative reporting timeframes for the annual reports. This presents a risk, in that the information presented in the annual reports may not reflect the most up to date status of the ecological values.

#### Opportunities

- The timely delivery of annual reports could be improved by taking into account timeframes for ACT Government processes and negotiating more flexible timeframes with the Commonwealth Government.
- PCS are developing an annual works program that recognises the seasons in which the MNES monitoring occurs (spring and summer) and the subsequent resources (suitably qualified staff) required to analyse the data and evaluate results prior to the annual reports due date. This program will ensure that the status of the ecological values are included in annual

reports, streamline processes and benefit all offsets managed by PCS (i.e. not just the GSA offsets).

**Commitment 17: Prepare and submit Plan Review Report (n=5).** The final Plan Review Report will include a summarised synthesis of all knowledge gained over the life of the Plan in order that it represents a complete description of actions taken under the Plan, requirements for ongoing management and opportunities for future enhancement beyond the life of the Plan.

The Report is the first of its kind in Australia and provides an opportunity to improve the development and delivery of future strategic assessments.

The following issues and opportunities were identified for preparation of the Report.

#### **Issues**

- There is little guidance on the specific requirements of the Report. This impacted the preparation of the Report as contributors did not know what information they needed to provide in order meet the commitment.
- The requirement to include the 2017 - 2018 Annual Report as part of the Report was challenging as the timing for the delivery of each report did not align.
- The timing of the Report (five years from commencement of the Plan) impacted the ability to collect meaningful ecological data. Due to the GSA being in its infancy, there has not been sufficient time for observable ecological change to occur from the actions undertaken as part of commitments implemented under the Plan. Therefore, it is not possible to provide comments on the outcomes of certain commitments as the information is not yet available.

#### **Opportunities**

- Greater guidance on interpretation of each commitment is essential due to the long lifetime of the GSA and subsequent changes to staffing and team structures that inevitably occurs. This challenge could be addressed by providing a document (i.e. a service delivery document) which clearly sets out the intent and actions that need to be delivered for each commitment. Service delivery agreements could be developed by EPSDD for future strategic assessments and would be subject to approval from the Commonwealth.
- The timing of reports in future strategic assessments could be extended to allow time for observable ecological change to occur and data to be collected and interpreted. Detailed reports could be completed every ten years of the strategic assessment lifetime. A shorter, interim report could form part of the annual report every five years.

#### **Conservation commitments**

The key issues relating to conservation commitments include:

- HIPS
- preparation of educational resources
- research into protected matters
- wildlife corridors.

#### **Habitat Improvement Plans**

**Commitment 27: Habitat Improvement Plans for Box Gum Woodland (approx. 104 hectares of habitat), Golden sun moth (up to 140 hectares of habitat), Striped legless lizard (up to 111 hectares of habitat) and Superb parrot.**

HIPS have been completed, noting some delays. They have been written in the context of the broader strategic assessment study area (landscape scale) and consider broader impacts and benefits to MNES. HIPS have been helpful for staff to manage complex sites with multiple protected matters. They have also been written in the context that offsets will be managed following adaptive management principles. Input was sought from multiple entities during the development of the HIPS.

### **Issues**

- Commonwealth approval is required for changes to the HIPS. This is often a lengthy process which makes it difficult to update and implement the HIPS in line with updated knowledge on the MNES and the associated management requirements (i.e. results from research and monitoring programs).
- While it is important to recognise the landscape scale benefit of developing HIPS, it needs to be recognised that the ACT Government is reviewing systems to improve the strategic management of threatened species and communities across ecological landscapes (the first focusing on values supported by grassland ecosystems, with BGW ecosystems in development). These systems will include planning tools to prioritise actions for relevant business units within the EPSDD Environment Division and will align with updated species and community action plans and the latest ecological information on MNES. These plans could inform management at the Operational Management Plan level. Investigations are required on the value of the HIP in light of these new planning systems to ensure that there is no unnecessary duplication.

### **Opportunities**

- Considering the above, explore opportunities to develop partnerships across business units in EPSDD and refine processes to reduce duplication of processes and documentation for strategic planning at the landscape scale.

## Preparation of educational resources

Commitment 30: Establish educational resources including signage and guidelines for residents of East - Throsby, including description of ecological values and significance of the Mulligan's Flat-Goorooyarroo nature reserve complex; no domestic animals in reserves; management of pest species along the urban edge.

The Woodlands and Wetlands Trust, in collaboration with PCS and the Suburban Land Agency (SLA), have prepared educational resources for residents and community members. The following materials have been developed since the Plan was approved:

- On 5 February 2016 and 9 April 2016 information expos and presentations were provided outlining the estate and sales process. The presentations included an overview of the values of the adjacent nature reserve and design responses in the estate to respond to these values.
- During 2017, banners were placed on SLA construction fencing prior to the erection of the predator proof fence by PCS.
- In November 2017, the Throsby Mingle Facebook page was launched. Information on the Superb parrot was posted on 8 December 2017 and information on the 'Friends of Mulligans Flat' was posted on 11 December 2017.
- Representatives from the Woodlands and Wetlands Trust attended the 'Spring into Throsby' sales event' and provided images of proposed Woodland Learning Centre to future residents.
- Information and materials relating to bettongs, quolls and management of BGW have been made available on the Woodlands and Wetlands Trust website.
- On 12 June 2018 banners containing information on cat containment were put up on fences in Throsby. The information has been provided for residents and meets the requirements of the relevant commitment under the Plan.

Information sessions have also been undertaken with the Gungahlin Community Council (GCC) and for interested buyers. The sessions have included:

- On 14 May 2014 a presentation regarding the draft Estate Design for Throsby was made at the GCC meeting.
- On 15 and 17 May 2014, drop-in information sessions were held at the Gungahlin Library to provide an opportunity for the public to view the draft design.
- Public exhibition of the Estate Development Plan (EDP) has been undertaken as a part of the Development Application (DA) process.
- On 12 August 2015 a presentation providing an update on progress and outlining the construction program was made at the GCC meeting.



Figure 5. Display banners at Throsby: Source Woodlands and Wetlands Trust

### Issues

- The timing for delivery of educational resources for new residents is an ongoing challenge as distributing the information to residents before they have moved into the development is not effective. There is also the expense associated with rolling out education material before there is sufficient uptake of residential blocks.
- There is a challenge in educating secondary residents (residents who purchase a house after the initial sale) and residents in rental properties. At this stage there is no way of knowing when new residents move into a property. Whilst education material could be rolled out quarterly to accommodate changes, there is a risk this could lead to current residents becoming overloaded and disengaging from the information provided.

### Opportunities:

- Develop a strategy for educational material to be provided to residents who are second residents or renters to ensure that the commitment is achieved.
- The proposed visitor centre at Mulligans Flat Sanctuary could provide an accessible location for residents and community members to access the information required by the commitments under the Plan.
- The Throsby Mingle Community Group could distribute information required by commitments to community members.

**Commitment 31: Commence planning for implementation of focused research on Superb parrot habitat requirements.**

The Plan has been a great opportunity for government to lead innovation and research for the SP. Under the commitment, strong partnerships have been developed through collaboration with entities and research institutions. Ongoing research and monitoring as part of the commitment has included:

- Monitoring the abundance of SP nests, eggs, and fledglings produced during the 2015, 2016 and 2017 seasons.
- In 2017, eight breeding pairs successfully fledged 20 young at Throsby East. This represents a 54% increase in reproductive output compared to 2016, but a decrease of 47% compared to the baseline year (prior to development). It is unknown if this overall decrease is due to seasonal variation, disturbance due to local earth works, or a range-wide decrease.
- To better understand site-specific effects (i.e. effects related to the development of Throsby), monitoring work was expanded to include a second SP breeding colony in the central Molonglo Valley as a comparison landscape. Monitoring included the visitation of bird, mammal and frog species to active and formerly occupied SP breeding hollows, using remote wildlife cameras. Citizen scientists are participating in research by analysing nearly one million nest camera images through the Australian Museum DigiVol site. The resulting data will be used in future analysis of nest site dynamics, in particular, competitive pressure. Results of this study will be published on the EPSDD website.
- Tracking the movement of breeding birds by attaching GPS loggers to adult birds. Tracking data show regular movement pathways through suburbs in northern Canberra, with birds favouring urban areas with planted and remnant Eucalypts, pod-bearing Acacias, and Elms.
- Recording the attributes of SP nest trees and nest hollows to better understand breeding site selection and determine whether nest attributes impact on reproductive output.

Research over the coming year is likely to include:

- Continued nest monitoring activities at Throsby Ridge, and two additional breeding colonies in the Molonglo Valley which provides context for interpreting Throsby breeding data.
- Collection of background avian community survey data at key breeding locations, including Throsby, to monitor the abundance of hollow competitors.
- Pilot deployment of long-range GPS satellite transmitters on breeding adult SP to advance understanding of migratory movement and locate wintering habitat.
- Analysis of landscape scale competitive pressure for nesting hollows at SP breeding landscapes to inform mitigation strategies.
- Spatial mapping of current and future potential SP habitat, including prediction of suitable SP nest hollow abundance per hectare in ACT temperate woodland.
- Deployment of short-range UHF transmitters at key breeding locations of Molonglo Valley and Throsby Ridge.

**Issues**

- The research program for *reducing or eliminating nest hollow competition*, needs to be more focused. For example, to investigate whether hollow availability is likely to be limiting

population growth of SP due to tree decline, or competitive exclusion—rather than diving straight into control measures.

- Proposed research was phrased as a management action. As such the aims of the research should be clearly described, appropriate and achievable.

#### **Opportunities:**

- Contractors will need to be informed of the commitment context to allow for better monitoring outcomes.
- An evidence-based framework that allows adaptive monitoring and research responses may be a better strategy to achieve the commitments and gain critical conservation information. This strategy would address the current limitation of commitments that are not flexible and cannot be re-phrased.
- Surveying relevant ecological sites outside the GSA area will go beyond the commitment to achieve enhanced conservation outcomes for the species.
- Overall, this research project has provided a catalyst from which to gain momentum and additional resources to invest in increasing our knowledge and understanding of the SP. In addition, having an ecologist who is engaged specifically to deliver this project has resulted in a wider understanding of the SP and ecological requirements across multiple ACT Government directorates, NSW Government departments and the broader community. The initial commitment under the Plan has evolved and opportunities for further research across the ACT and into NSW are being investigated.

#### **Commitment 32: Research Golden sun moth habitat requirements:**

- may include research into translocation of Golden sun moths
- fragmentation and proximity to urban areas.

Ongoing research into GSM habitat is being undertaken and has advanced the knowledge of the species.

Species counts and habitat surveying were undertaken for 2017 - 2018. In accordance with Commitment 32 research was undertaken into translocation of GSM. Species were harvested from Taylor and transferred to a site in Kinlyside. The experiment trialled two methods of transfer of moths. The two methods included the transfer of large slabs of soil and grass and the collection and transfer of caterpillars. Both translocation methods were equally successful regarding the number of moths that emerged. However, the direct transfer method was a lot more cost-effective. Ongoing monitoring needs to be undertaken to confirm if translocation to Kinlyside has resulted in establishment of a viable reproducing population.

The translocation research work has demonstrated that a conservation mitigation measure could include the collection and onsite localised transfer of GSM caterpillars that lie within a development footprint (that is only impacting a portion of the total habitat area).

### Issues:

- Data collection can be impacted by poor seasonal conditions which in turn impact research findings.
- Habitat protection and improvement may be a better strategy than translocation.
- Translocation within the ACT appears to have limited applicability, as there are few areas of what appears to be suitable habitat, which are not already occupied by the moth.

### Opportunities:

- Research arising from the GSA provides insight into how we can better allocate research funds for GSM and has revealed key knowledge gaps in managing GSM that should be addressed to improve management of this MNES. Specifically GSM translocations has suggested that:
  - While translocations show some degree of success, a long-term funding and resourcing commitment to monitoring is required to appropriately evaluate the success of such a project.
  - Research should be coupled with habitat protection/improvement research to provide a 'relative' measure of which action provides best return-on-investment.
  - Allocation of research resources into GSM should be focussed on effectiveness of habitat protection and improvement measures in maintaining GSM populations and/or increasing extent of populations.

### Wildlife corridors

**Commitment 35: Undertake plantings to improve connectivity and wildlife movement along Gungaderra and Sullivan's creeks, targeting in particular Superb parrot movement corridors.**

Works undertaken to meet the commitment have included:

- Planting of 8000 trees along Gungaderra and Sullivan's creeks occurred during community planting days with Greening Australia and by engaging private contractors.
- Erosion prevention and provision of wildlife corridors (using the least cost connectivity pathways) have been implemented running north-south through the eastern side of the offset area.
- Vegetation has been selected to ensure a choice of appropriate forage and breeding species for the SP, which included BGW species, endemic trees, shrubs and grasses.
- Cattle grazing was removed from the planting paddocks to make comparisons with paddocks where stock are used. The first maintenance check of the plantings in Throsby East showed close to a 90% success rate.

### Issues

- Site preparation was not appropriate and resulted in modification of the process for later plantings. This was achieved by a mid-term maintenance program (completed by a contractor) including watering, mowing, weeding, checking guards, stakes and weed mats, and GPS recording of all dead plantings.

### Opportunities

- Site preparation should be finalised prior to planting and this should be adopted in similar planting processes (using the least cost connectivity pathways) in Throsby North and the wider Gungaderra Creek area.

- New techniques and information can now assist us in improving connectivity of wildlife corridors. For example, radio tracking of SP has helped to recognise where to target revegetation works to focus on the species' main foraging routes.

#### Financial commitments

Annual Financial Reporting is provided with the 2017 - 2018 Annual Report at [Appendix A](#).

## 5. Independent audit of the Gungahlin Strategic Assessment

The Plan specifies that an audit of the commitments is required every five years to ensure commitments are being implemented. The Plan identified the Office of the Commissioner for Sustainability and the Environment (OCSE) as an appropriate entity to undertake the audit given the office is an independent authority.

In November 2017, OCSE delivered the first independent audit into the GSA. The audit found that the majority of the commitments, a total of 19 (five with observations), were compliant. A total of 13 commitments were not compliant, five of which were identified as high risk.

Areas of non-compliance resulted largely from delays in timely delivery and implementation of the commitments across government agencies. Five corrective actions were issued for the high risk items to ensure commitments are met. The five corrective actions related to:

- 1) implementation of the Cat Containment Policy (Commitment 5)
- 2) review of the Taylor Stage 1 Construction and Environmental Management Plan (Commitment 11a)
- 3) prepare process documentation for reporting on potential breaches of commitments in the Plan (Commitment 15)
- 4) complete Fire Hazard Management Strategies (Commitment 28)
- 5) prepare educational information for residents moving into Throsby (Commitment 30)

The audit report also made eight recommendations for improving the delivery of GSA commitments. A response to each of the audit recommendations is detailed below:

- 1) The completion of the five corrective actions detailed in the audit table on or before the critical dates.

All five of the corrective actions have been delivered as summarised below:

- On 20 December 2017 a plan on how to address compliance and enforcement for cat containment was completed (Commitment 5). Transport Canberra and City Services (TCCS) are responsible for administering cat containment under the *Domestic Animals Act 2000*. TCCS is currently developing a Cat Containment Plan and this will aid in the development of cat management compliance strategies for the GSA area. The cat plan includes a cat containment policy which will be implemented in all urban development areas during detailed design for each suburb.
- On 29 January 2018 the Taylor Stage 1 CEMP (Commitment 11a) review was completed. A new CEMP procedure has been implemented to ensure CEMPs for greenfield developments in the GSA area are submitted and reviewed.
- On 29 January 2018 the GSA incident reporting (Commitment 15) process was completed. The process has recently been updated to provide additional time to investigate potential breaches and ensure the procedure meets the objectives of this commitment.
- On 20 February 2018 the outstanding fire management strategy for Throsby and Horse Park North was completed (Commitment 28). Based on the development timelines, the fire management strategy for the Taylor offset is not required until later this year.
- A plan for rolling out educational material has been developed to target both buyers and residents (Commitment 30). The plan was finalised on 20 December 2017. First land sales in Throsby commenced in February 2016 with first settlements in May 2017. As at July 2017, 34 dwelling sites were under construction (1065 vacant sites). An educational brochure for distribution to Throsby residents is expected to be rolled out by July 2018 (this is dependent on occupation rates).

- 2) That the ACT Government adheres to prescribed timeframes for delivery of all commitments and/or formalises with the Commonwealth the approval process to be adopted in the event of changes to due dates on commitments.
  - EPSDD is coordinating the GSA on behalf of the ACT Government. Where there is an unexpected delay and timeframes are unable to be met, EPSDD will seek advice from the Commonwealth on how to proceed and agreement to revised timeframes.
  - Improvements in procedures are currently underway to ensure that commitments are met within the prescribed timeframe. This includes the development of a database to track critical dates and key decision points.
- 3) Improvements in the process for collection of evidence on implementation of the commitments in the Plan.
  - EPSDD is responsible for coordinating delivery of the GSA. Documents relating to the strategic assessment will be filed in accordance with government record keeping system requirements. EPSDD is also collating historical information on this strategic assessment to ensure accurate records from commencement of the strategic assessment are held.
  - The key to improving the collection of evidence and information relating to the strategic assessment commitments is to have a coordination team, and a process for maintaining consistent records and liaising with all government agencies.
  - EPSDD took on the GSA reporting function in 2016 and is working with relevant agencies to improve procedures to ensure information is captured, reviewed and filed in a consistent manner.
- 4) All the research undertaken as a function of the GSA and the Plan is made publicly available on the web, is accessible and easy to find, and includes historical research as well as the most recent scholarship and reports.
  - The EPSDD webpage is currently being updated to ensure research and reports are available to the public.
  - A new strategic assessment webpage will hold all relevant documents and guidance material relating to the GSA in one location. The webpage will ensure the information is easily accessible to the public, and is expected to be completed in quarter 4, 2018.
- 5) The Key Risks section in the audit report is noted and the recommendations in this section will be incorporated into future management.
  - Two of the key risks, relating to informing buyers and commitment breaches have been addressed through the completed corrective actions.
- 6) The management of leasehold land and the ability to meet offset requirements is one of the key issues of the strategic assessment and is discussed further in this report. Further investigate the commitments that have been termed Undetermined.
  - A review of the commitments identified as 'Undetermined' in the audit report has been actioned.
  - The audit report identified commitments 3 and 12 as 'undetermined' due to a lack of evidence. Commitment 3 requires the ACT Government to provide guidance on the development of concept plans to ensure appropriate land use planning for areas adjacent to MNES habitat, and associated buffers to all urban development. The audit report noted that no evidence was provided to show how asset protection and buffer zones were addressed.

- Asset protection and buffer zones are addressed during development applications for estate development plans. This includes an assessment of the estate development plan against the ACT Bushfire Regulation, and the commitments under the GSA. The offset areas are currently classified as a Strategic Firefighting Advantage Zone, which requires the bushfire fuel load to be managed in accordance with the standard described in the Strategic Bushfire Management Plan for the ACT.
  - Commitment 12 requires the ACT to ensure all obligations have been met in regards to the management of MNES before handing over assets for ongoing operation. The audit report noted that there was insufficient evidence to make a determination on the status of this commitment.
  - Existing processes and developing new procedures to ensure all data relating to the GSA is captured is currently underway. This includes establishing service delivery agreements with each relevant agency, which will outline how such obligations are met.
- 7) The observations detailed in the Audit Table are noted and are used to inform future management.
- The audit report provides a number of observations in relation to achieving the conservation outcomes of the GSA.
  - The observations relate to management actions to achieve habitat improvement targets including benchmarks to ensure the targets are met and consideration of planning research to ensure a strategic approach is applied in delivering future management of the GSA.
  - The ongoing collection of data to assist in ensuring habitat improvement targets has been identified as one of the key issues for the GSA. Further work is required to ensure monitoring methodologies are consistent and results are sufficient to inform adaptive and future management to meet the conservation objectives of the Plan.
- 8) Adaptive management principles are carefully scrutinised and considered for incorporation into implementation of the commitments for this Plan.
- Ecological values within the GSA area will be subjected to the increasing and ongoing pressures of urban development and climate change. These pressures are not always known and their effects may be uncertain. Management actions are assessed on a case by case basis and where required adaptive management actions are applied to ensure conservation outcomes will be met. This will become increasingly important to ensure the objectives of the Plan are met over the extensive timeframes for the strategic assessment.
  - Adaptive management is discussed in the Key Issues section of this report.

It is important to note that improvements to procedures are ongoing, and the projects above are only the start in addressing the key recommendations outlined in the audit report. The recommendations identified in the audit will complement those provided in this report and assist in ensuring the conservation outcomes of the Plan are delivered.

## 6. Key issues

The following key issues have influenced the management and implementation of the GSA over the past five years:

- Coordination
- Interpretation and delivery of commitments
- Monitoring and mapping
- Timing and delivery
- Land Management Agreements
- Adaptive Management Principles
- Reporting requirements
- Funding

The discussion on the key issues will inform recommendations to improve the delivery of the GSA and the development of future strategic assessments.

### Coordination

Inconsistent and non-centralised coordination across the various agencies responsible for delivering the GSA has been the overarching challenge to manage, implement and achieve the objectives of the Plan. The issues observed with coordination for the GSA are provided below.

- Government restructuring and changes to staff roles and responsibilities has resulted in the management of the GSA moving across various teams and directorates over the past five years. As a result, the Plan has lacked centralised and consistent coordination and direction to ensure that commitments are met and strategic objectives are being achieved.
- Internal and external stakeholders who are responsible for delivering the strategic assessment often work in isolation from one another. This has resulted in unsatisfactory communication at times, lack of sharing of information and resources and actions occurring in the GSA area with poor consultation or no consultation occurring.
- Lack of centralised coordination and direction for the Plan has occurred at various levels of Government. This is demonstrated by the directorate-wide Offsets Working Group which has been set up to liaise across the teams that coordinate, manage and deliver commitments under the GSA. The working group meets quarterly and enables staff at the officer level to share knowledge and discuss any key issues or challenges for the delivery of commitments under the Plan. However, the lack of representation at an executive level on the working group has been identified as an improvement area for coordinating delivery of the GSA.

In 2016, the role responsibility for coordination of the GSA was allocated to the Planning Delivery Division in EPSDD. Coordination and communication between the agencies has since improved, and Planning Delivery are continuing to work with agencies on ways to further improve the coordination and implementation of the strategic assessment.

### Interpretation and delivery of commitments

The Plan contains limited information on each commitment, with the details of each commitment defined in more detail after approval of the strategic assessment. This is sufficient for most commitments, however, for some commitments this is an issue as the exact details of what is proposed by each commitment may not be clear. In particular, given the long timeframes for

delivery of the strategic assessment commitments, there are inevitable changes of staff which means documentation of the specific requirements of each commitment needs to be well defined.

Additionally, the Plan is delivered by a range of agencies including internal and external stakeholders. Across these groups there has been confusion about the interpretation of commitments, what the commitment is expected to deliver and what actions need to be undertaken to achieve these deliverables.

Factors which have influenced different interpretations of commitments include:

- Changes in Government structure and the roles and responsibilities of staff mean that the stakeholders who originally established the Plan may no longer be involved in its delivery. As a result, knowledge about the intention of each commitment has been lost or may have changed during the first five years of the GSA. This has resulted in confusion about the intention of commitments, what needs to be delivered by the commitment and the actions required.
- Some of the commitments were developed by consultants and not by Government staff. In these instances, the intent of the commitment may be unclear and may not align with ACT Government strategic priorities.
- The Plan lacks clear definitions for some terms which relate to the outcomes that need to be achieved to meet commitments. For example, some commitments require 'management' of areas of hills, ridges and buffers that are outside offset areas. The Plan does not specify what 'management' means and the expectations these specific sites. Therefore, it is unclear if there is an expectation that quality will be maintained and/or improved and how much management needs to be undertaken.

## Research

Research commitments in the Plan are not clearly defined and do not have clear objectives. For example, the SP research (Commitment 31) specifies detailed requirements, which after further consideration may not result in effective outcomes.

## Monitoring and mapping

Desktop mapping exercises were undertaken in preparing the Plan. This has resulted in some inaccuracies when subsequent surveys have been undertaken and the mapping has been refined. This is a common issue which occurs across strategic assessments due to the large-scale nature of the assessments.

There is a need to ensure that the methodology for surveying and recording data is consistent, and where techniques change all parties should be informed to ensure the integrity of the data and allow for comparison of the data.

## Timing and delivery

### Timing for commencing management of new conservation areas

The Plan specifies timing for commencing management of new nature reserves. The timing is often related to the commencement of an associated development area. This ensures that offsets are not established before they are needed to offset the impacts of development, however, it also results in issues for interim management.

Consideration needs to be given to how such sites are managed in the time between commencement of the strategic assessment and commencement of development which triggers the requirement for implementation of the commitment. During this period there is little incentive for

land managers to spend money and resources on these areas, particularly where there is a rural lease and the lessee is aware that the land will be resumed in the near future.

The timing of offset requirements should be included in early stages of development to assist in achieving commitments. This was illustrated by Commitment 33, where the cost of salvaging and installing tree structures could have been reduced if it was included in the CEMP and completed when construction equipment was located at the site. Installing the salvaged trees later in the development phase resulted in higher costs for ACT Government.

### Adaptive management principles

The Plan is developed around adaptive management principles which are described in the Plan as a systematic process for continually improving management practices through learning from the outcomes of previous management. An illustration of the Adaptive Management Process contained within the Plan is provided below:

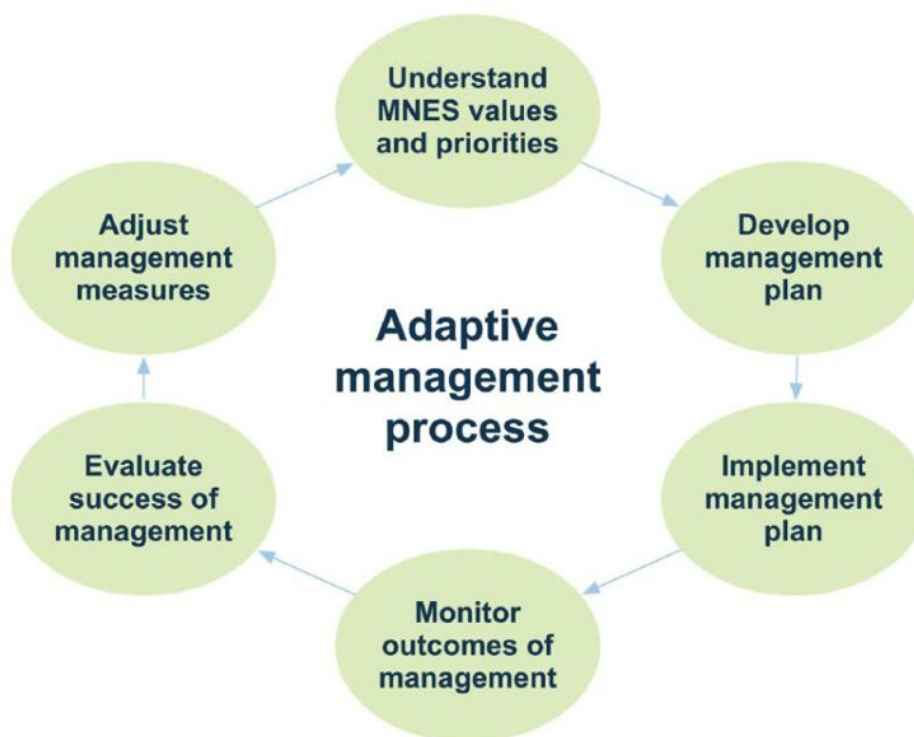


Figure 6. Adaptive management process: Source Gungahlin Strategic Assessment

The following observations regarding adaptive management were identified:

- Adaptive management requires in-depth initial planning, conceptualisation of ecological systems and a variety of potential management actions. Under adaptive management, monitoring is conducted to answer specific questions. This system can be hard to achieve under the current Plan and requires a high level of financial investment. In order to address these limitations and achieve commitments, an evidence-based management strategy may be more appropriate and achievable. It should also be acknowledged that, in some instances, it may take several years to gather sufficient data to evaluate management actions.
- Grazing at offset sites is conducted by land managers to meet monetary and/or productivity objectives. Adaptive management principles could be supported by the ACT Government operating its own grazing herd which would allow control over the timing and intensity of grazing and achieve conservation outcomes.

- The required management plans take significant time and resources to develop and are static documents that cannot reflect ecological changes (i.e. seasonal changes) at the offset site. Therefore, there is an opportunity to review the management plan process so that documents can be developed more efficiently and easily updated to reflect the ecological and landscape conditions for specific offset areas.
- The current timeframes in the Plan may not be achievable as it can take up to 40 or more years to establish and evaluate ecological outcomes.

### Avoidance vs offsets

The future conservation areas identified in the Plan include both 'offset' and 'avoidance' areas. However, the level of management required in avoidance areas is not adequately defined in the Plan.

The concept of avoidance would suggest that these areas need to be maintained at current condition. The Plan itself does not provide an indication of measures required to maintain the values of these areas and what interventions would be undertaken to ensure maintenance of values.

PCS has secured significant funding for these sites, mainly to address the high level of Serrated Tussock. This is a highly invasive species that will reduce the diversity and cover of the native understorey.

The Plan does identify patches of BGW within the Taylor site for improvement. All areas will otherwise be managed to maintain condition based on baseline level. The sites have been incorporated in the monitoring program. Jacka has no BGW present and will be managed only as a means to maintain connectivity within the landscape.

### Reporting requirements

There are a range of documents identified in the Plan which require guidance to be provided for different processes, such as the development of concept plans.

It is not always clear who needs to comment and provide input into these documents and the timeframes are often unrealistic and inflexible. Having inflexible timeframes can create issues where the delivery of commitments is rushed in order to achieve a timeframe, which does not have any effect on MNES. It would be better to have flexible timeframes, negotiated with the Commonwealth on a case by case basis which focus on protecting MNES.

### Funding

The initial funding planning for the GSA established two funding models that are set out in Section 5.3.2 of the Plan

**Option 1:** *Trust account approach under the ACT's Financial Management Act*

**Option 2:** *Budget process. The annual required funding would be provided to TaMS, as part of the annual Budget Process, based on the projected expenditure for that particular Budget year. The PIT would report these activities to achieve the yearly requisite direct and indirect offsets, through the ACT Government Annual Report Process (which would also satisfy Commonwealth reporting requirements). Under legislative requirements, any funding directed to this budget line would be spent on meeting the commitments within the Plan.*

It is noted that the Plan is now administered by EPSDD, not TCCS (formerly TaMS) as originally stated in the Plan.

To date the majority of funding has been administered by Option 2, through business cases put forward in the annual Budget Process.

The initial funding for the GSA was done as a collaborative process within government. The initial amount of funding provided was high. However, the need for funding has increased due to the complexity of commitments and the resources needed to meet Commonwealth requirements. Instances where funding has been underspent by certain areas and/or project teams for specific offset requirements does not reflect an oversupply of budget across all offset areas.

## Land Management Agreements

### Offsets on rural leases

There are currently two primary options for management of ecological values on rural leases:

- The ACT Government could resume the land and manage it as a public reserve.
- The area could be maintained as a rural lease with a public land overlay and the ACT Government could work with the landholder to manage the area through some form of stewardship payment.

It has been observed that both approaches have limitations and the following issues have been identified:

- Public land management can be more expensive in comparison to rural land management because of the need to provide additional infrastructure.
- There may be public expectation relating to public access, managing risks associated with public access such as needing to ensure contamination is removed, management tracks need to be maintained to certain standards and/or the area is subject to additional pressure from recreation.
- The values of the area are best maintained through strategic grazing by wild animals and/or domestic stock and may need other active management including ecological burning, intense feral and weed management, all of which are more difficult in reserves managed jointly for public recreation.

Issues relating to offsets over private leasehold land include:

- Obligations to manage land for offsets have arisen from decisions made by the developer and the ACT and Commonwealth governments. Landholders are not generally party to these land-use planning decisions.
- Where land is retained as a rural lease under a mixed management model there are risks associated with Government being responsible for meeting offset obligations on land that is not under their direct control. There is also little incentive for rural lessees to spend time and money managing the site, hence, ecological values may decline.
- Where a decision is made to retain land as leasehold, the leasehold system may not provide sufficient certainty for landholders to put in place long-term arrangements.

Issues relating to land that is subject to short-term lease or lease withdrawal clauses include:

- Lease holders may experience uncertainty about how obligations may affect future rural production and incomes.
- Leaseholders may need to be licenced to undertake normal farm activities if there is a public land overlay over the property.
- Management of particular species may need active management which does not coincide with the landholder's interests and intentions for the property

- Obligations for management may require specialist technical intervention that a landholder is unable to provide.

### Reserve management

When the reserve land is under a private lease, reserve management is undertaken by the land manager with oversight from PCS.

Management programs have been in place with land holders to manage vertebrate pests, monitoring and controlling weeds, and addressing boundary fencing. This is completed under a plan provided by ACT Government, incentivised through financial assistance.

Seasonal reserve management by the land manager is encouraged and ACT Government requests extra activity on top of what would usually occur at a rural enterprise i.e. seasonal weed control, extra vertebrate monitoring. If land owners cannot complete the work required then government can engage a contractor to complete the works.

The following challenges for reserve management have been identified:

- Inconsistencies and errors in mapping across consultant reports makes it hard to achieve conservation outcomes in reserves.
- Different objectives and therefore different management priorities can cause a number of issues when the management activities clash.
- Short-term leases on reserve land may disincentivise land managers to undertake conservation actions and this may impact commitments to be achieved.
- The development of commitments was not done in consultation with landholders. Targets are non-voluntary, and have been achieved by building rapport with land holders.

## 7. Legislation and policy context

### ACT legislation

#### Nature Conservation Act 2014

The *Nature Conservation Act 2014* (the NC Act) commenced in June 2015 during the operation of the first five years of the GSA. Implementation of the NC Act has included the development of regulations and a large number of plans and strategies that may have a relatively minor impact on implementation of the GSA but does not impact on the delivery of commitments.

In April 2014, environment ministers across Australia agreed to move towards greater consistency and reduced duplication in the assessment and listing of threatened species and ecological communities. In 2015, jurisdictions collaboratively developed a Memorandum of Understanding (MOU) that set out the reform measures and provided an implementation framework. In November 2015 the MOU was signed by the ACT Government. On 7 June 2016, the ACT Legislative Assembly passed amendments to the NC Act to facilitate implementation of the MOU. The amendments commenced on 16 June 2016.

Implementation is being progressed, including through collaboration with other states and territories, for applying a common assessment method, including for transition of legacy species to a Single Operational List. Work undertaken to progress the reform to better align the ACT and Commonwealth listings included preliminary assessment of the 34 ACT listed species and a further 18 species listed under the EPBC Act that may occur or visit the ACT. This preliminary assessment identified sixteen species that will need a more detailed re-assessment before their status is finalised. Changes to the threatened species list will largely be finalised in 2018.

This means that there will be better alignment of ACT and EPBC Act protected matters. For example, the GSM is listed as critically endangered under the EPBC Act and endangered under the NC Act. Work is proposed to assess and consider the most appropriate conservation status. This may not affect commitments to manage GSM but might inform adaptive management actions.

#### Reserve management

Areas primarily reserved for nature conservation under the Territory Plan (wilderness areas, national parks and nature reserves) have been assigned to an International Union for Conservation of Nature (IUCN) category. The IUCN has developed an international standard of categories for describing and guiding the management of protected areas. In 2011, the Commissioner for Sustainability and the Environment (the Commissioner) released a report on the *Investigation into the Canberra Nature Park (nature reserves); the Molonglo River Corridor (nature reserves) and Googong Foreshores*, which recommended that the ACT Government categorise its nature reserves by drawing on the IUCN categories. This work was completed in September 2016 through notification of an instrument on the Legislation Register. Through the National Reserve System Program, all jurisdictions report to the Commonwealth on IUCN categories for their reserves, which are stored in the Conservation and Protected Area Database (CAPAD), hosted by the Commonwealth. This change provides greater consistency in reporting about the extent of ACT protected areas management for conservation including reserves established under the GSA.

#### ACT Nature Conservation Strategy

The ACT Nature Conservation Strategy (the Strategy) commenced on 7 August 2013. The Strategy guides the protection and management of biodiversity in the ACT and region. It articulates a vision for 'biodiversity rich, resilient landscapes stretching from the inner city to the mountains, where well-functioning ecosystems can meet the needs of people and the environment'. This desired future is to be achieved through the Strategy's five key strategies and 33 actions. The key strategies are to:

- enhance habitat connectivity and ecosystem function

- manage threats to biodiversity
- protect species and ecological communities
- enhance biodiversity value of urban areas
- strengthen community engagement.

The Strategy is being implemented through two five-year implementation plans. Implementation Plan 1 (2013–18) identifies milestones for each of the 33 actions.

The Strategy emphasised the importance of prioritising on-ground action to strengthen habitat connectivity and landscape resilience, including supporting flora and fauna to adapt to climate change. Significant on-ground investment has targeted restoration at sites to better connect woodlands and improve native grasslands. These outcomes are enhanced by the GSA.

In addition, Strategy Action 4.1 includes a requirement to ‘manage impacts of urban development on significant biodiversity assets through Environmental Impact Statement Processes and Strategic Environmental Assessments’ Implementation of the GSA is a key delivery action associated with that objective.

#### Research and monitoring program

The Conservator of Flora and Fauna outlines strategic direction and priorities for research and monitoring in the Biodiversity Research and Monitoring Program (BRAMP). The BRAMP is updated biennially. In July 2015, the Conservator released the first Biodiversity Research and Monitoring Program (BRAMP) 2015-17 that set out the ACT Government’s biodiversity research and monitoring priorities. A second BRAMP covering 2017 - 2019 includes provisions for:

- A key activity within the BRAMP is the Conservation Effectiveness Monitoring Program, which establishes a monitoring framework for eight representative ecosystems in the ACT’s nature reserve system.
- The Conservation Effectiveness Monitoring Program is currently in preparation. The monitoring of the GSA offsets will fall within this system once fully developed.

#### Action plans for threatened species

While the offset sites have been established in response to impacts on specific MNES, reserve management plans include actions for the management of all species protected under both Commonwealth and ACT Government legislation. Action plans for species and ecological communities that occur within the GSA offset sites have been developed. These can be found on the EPSDD website.

- Strategies and plans under the NC Act are regularly reviewed. Action plans for threatened species and ecological communities outline actions to be taken for the protection of listed species. These are reviewed every 5 years and updated every 10 years.
- Actions outlined in these reviewed action plans will inform the adaptive management of species commitments under the GSA because the latest science and research informs the actions identified and includes evidence about the impacts of climate change on species, where known, which is critical to inform ongoing adaptive management.

## ACT policy

### ACT Environmental Offsets Policy

The ACT Environmental Offsets Policy (the Policy) is a statutory policy under the PD Act, which commenced on 2 April 2015, following changes to the PD Act through the *Planning and Development (Bilateral Agreement) Amendment Act 2014*.

The Policy outlines the ACT Government's approach to the use of environmental offsets for MNES under the EPBC Act and for ACT protected matters.

The Policy is implemented through a range of provisions under the PD Act. These include provisions relating to:

- consideration of MNES through environmental assessment processes
- development of guidelines to assist in the development and consideration of environmental offsets and an offsets register.

The Policy is supported by a delivery framework which reflects the provisions of the PD Act and a number of administrative processes.

Section 111G of the PD Act states that the Minister must monitor the effectiveness of the offsets policy and consider, at least once every five years, whether or not the policy needs to be reviewed. If the Minister decides that the policy needs to be reviewed, then a review must take place. The offsets policy may then be revised if the review finds that this is necessary. The review will need to focus on whether the policy meets the needs of the ACT and whether it effectively and efficiently delivers what it aims to deliver. Any review should consider whether or not the principles of the policy are being met, and if, in meeting these principles, appropriate outcomes are being achieved.

The offsets policy commenced on 2 April 2015 in anticipation of the Commonwealth's 'one-stop-shop' for environmental approvals, under which approvals for actions impacting EPBC listed matters, would be undertaken by the ACT. The 'one-stop-shop' has not progressed, and because of this, all approvals with offsets in the ACT have been made under the EPBC Act and using the Commonwealth's offsets policy. In effect, this means that parts of the ACT's offsets policy and delivery framework are not utilised (for example use of the ACT environmental offsets calculator). However, the ACT offsets policy was developed to be consistent with the Commonwealth policy and has the same core principles.

### ACT offsets register

The offsets register provides information on offsets in the ACT as required under section 111V of the PD Act. The register is to provide information on offsets given effect under the EPBC Act and the PD Act.

The register includes details of offset areas and associated development, and links to information on environmental approvals, management and additional reports. The geographic location of each offset can be viewed on ACTMAPi. In accordance with the ACT Environmental Offsets Delivery Framework, the planning and land authority is responsible for maintaining a register of offset sites. Conservation areas established as a result of the GSA are documented on the register.

Requirements relating to environmental offsets have embedded processes for assessing and managing environmental offsets in the ACT, including mandatory requirements for an ACT environmental offsets policy and an offsets register. A range of other governance structures have been put in place, including an Offsets Working Group which liaises across the directorate and a Plan Implementation Team to coordinate action specific to the implementation of the GSA.

The *Nature Conservation Act 2014* (NC Act) and subsequent reforms to align threatened species listings will provide a more transparent governance platform for future assessments. For example,

NC Act requirements for assessment and listing of nationally threatened species now mirror those of the Commonwealth and the NC Act provides for conservation advices and action plans to be adopted by the Commonwealth and vice versa, allowing for more integrated management. A process of aligning species under both the NC Act and the EPBC Act will lead to improved management with resources targeted to those species most at risk.

## 8. Recommendations

The Plan was intended for use by the ACT Government, the private sector, land owners and individuals as a guiding policy for biodiversity conservation activities within the GSA area. In several areas, the Plan has been successful against this purpose.

Within the ACT Government, the Plan has informed the design of biodiversity and land management programs and has been used to target investment in projects which advance the Plan's objectives.

The key findings of the review outline the major issues which have limited the Plan's success in its first five years. This section makes a range of recommendations for improving implementation and delivery of the GSA and for future strategic assessments.

### Coordination

Recommendations relating to the GSA:

- Co-ordinating the delivery of the GSA commitments should be undertaken collaboratively across government and with non-government stakeholders. Collaboration can be achieved through early engagement with external stakeholders to improve the on-ground outcomes when delivering commitments.
- Policy development to support the delivery of commitments should be undertaken across government and with non-government stakeholders. The GSA working group could adopt a stronger focus on policy development to ensure the required policies are delivered.
- Formalise the role of the GSA working group (in addition to a PIT) with representation from higher levels of ACT Government. Continue to have regular working group meetings for Gungahlin to inform PIT activities and ensure agencies are implementing commitments in accordance with the Plan.
- Explore an alternative mechanism for governance and assess if the role of the PIT could be enhanced via representation from lower levels of government.
- Funding for the GSA has yet to provide adequate resources to co-ordinate management across all areas of Government, in particular, the development of suitable policy.

Recommendations for future strategic assessments are:

- Early consultation across all stakeholder groups could ensure the needs of various stakeholders are considered in developing commitments so that commitments are achievable.
- Adequate policy is required early in the establishment of the strategic assessment to inform the delivery of commitments—especially those on rural land (including advanced offsets on rural land i.e. Kenny).

### Interpretation and delivery of commitments

Recommendations relating to the GSA:

- The GSA working group to be responsible for developing a wiki or glossary detailing the interpretation of each commitment which could help to reduce confusion across the various stakeholders involved in implementing the GSA. The wiki or glossary should include the intention, definition and deliverables for each commitment and be submitted to the Commonwealth Government for approval and inclusion in the Plan.
- Develop service delivery agreements, or similar, with relevant agencies. The service delivery agreement would include the intention of the commitment, key deliverables (including specific actions) to achieve the commitment and who is responsible for delivering each commitment.

Recommendations for future strategic assessments:

- The wording of each commitment needs to be examined in detail to ensure the intentions and deliverables of the commitment are clear. Each commitment should also be discussed with all relevant agencies, including those responsible for implementation, before commitments are finalised.
- There is an opportunity for future strategic assessments to include a one page plan for each commitment at commencement of the strategic assessment, clearly defining what the commitment entails, who will deliver the commitment and timeframes for delivery.

### Monitoring and mapping

Recommendations relating to the GSA:

- Mapping for BGW has been recently revised. An assessment of the extent of BGW (both ACT and EPBC Act) needs to be undertaken and the Commonwealth consulted.

Recommendations for future strategic assessments:

- Undertake detailed and accurate mapping at an appropriate scale before the strategic assessment is approved.
- Develop standard monitoring and survey methods to apply to the strategic assessment area and over time. This will ensure results are comparable to original baselines.

### Research

Recommendations for future strategic assessments:

- Detailed requirements relating to research need to be flexible and able to be varied upon agreement with the Commonwealth after approval of the strategic assessment. This will ensure that research is designed to be most effective and able to respond to changing information/knowledge and emerging needs.
- The purpose (aim or question) of the research needs to be clearly defined, appropriate and achievable.

### Timing and delivery of commitments

Recommendations relating to the GSA:

- Provided that the overall outcome for MNES are achieved, commitments that have specific targets should be flexible to respond to the different challenges and opportunities across the strategic assessment. For example, targets in rural lease areas should be flexible to allow for grazing and commercial operations to occur, provided that the overall target is met.
- Delivery of commitments could be improved by adopting an environmental stewardship program. The objective of this program would be to provide long-term support for private landholders to maintain and improve the extent and condition of matters of national environmental significance.
- Develop guidance material for the next Report with specific questions and targeted information that will be used to evaluate the prior five years of GSA implementation.

Recommendations for future strategic assessments:

- Future strategic assessments could include an establishment phase of time of 1-5 years. This phase would include baseline monitoring, establishing ecological targets and building internal capacity, skills, knowledge and systems to ensure the commitments can be achieved.

- Offsets should be considered in early development activities to make sure commitments are achieved.
- Ensure strategic assessments clearly document procedures for each commitment, including responsibility, input agencies and timeframes (which need to be flexible in some instances).

## Land Management Agreements

Recommendations relating to the GSA:

### Offsets on rural leases

- Consider whether there are alternative types of reserves or other mechanisms that could be used or developed to secure offset arrangements while still allowing for rural production on leasehold land. This may include developing legislation to support conservation agreements on rural leases, developing an environmental stewardship program or other financial incentives to promote conservation-based land management. Any program would need to provide lessees with adequate support to undertake management towards meeting commitments.
- Review the effectiveness of LMAs as a tool to facilitate the management of the offsets to achieve commitments and as a tool to measure and enforce compliance.
- Ensure offset targets on rural leases are developed recognising the complexity of managing conservation values concurrently with rural production. This is particularly important if the condition of conservation values needs to be improved to meet the offset requirements. In these instances, alternative sites should be considered as part of an offsets package.
- Negotiate early with rural leaseholders to determine if government management is an option to achieve specific commitments.
- Develop policy to establish frameworks around engaging rural lessees to undertake works in order to achieve commitments. The policy should consider options for funding and mechanisms for compliance and enforcement of LMA conditions.
- Develop policy to understand options for advanced offsetting, both in the GSA and across the ACT.

## Reserve Management

Recommendations relating to the GSA:

- Government resourcing needs to allow for reserve management planning, implementation, monitoring, evaluation and reporting.
- Ensure internal structures and resourcing facilitates building relationships with external stakeholders.
- Develop policy guidelines on how to engage rural lessees to manage offsets and how to engage lessees to manage advanced offsets i.e. Kenny.
- Further discussion and/or investigations are required about the compatibility of managing the offset commitments within the newly expanded predator proof fence at the Mulligans Flat Woodlands Sanctuary. This may require additional monitoring of values to ensure the management of MNES is compatible with the habitat management of Bettongs and Quolls. This needs to be undertaken as part of the broader review of GSA improvement targets.
- The deployment of resources and management of the offsets in the sanctuary could be more integrated and coordinated with PCS.

## Adaptive management principles

### Recommendations for the GSA:

- Develop internal capacity to enhance understanding of adaptive management principles within government and implement review processes to these principals are being met.

### Recommendations for future strategic assessments:

- Develop commitments with consideration of complex ecological outcomes and with sufficient flexibility to design a robust adaptive management program.
- Prepare an environmental offset guideline outlining processes for avoidance areas to ensure that the values of these areas does not decline.
- Future strategic assessments should include commitments that are based on increasing ecological knowledge via research that can be implemented for improved outcomes, as opposed to quantitative targets that must be achieved.

## Reporting

### Recommendations for the GSA:

- Review the requirement for an annual financial audit. Financial reporting on a site by site basis may be a more efficient mechanism to provide findings on the overall investment in MNES commitments outlined in the plan and overall financial performance.

## Funding

### Recommendations for the GSA:

- Budgeting should be allocated to meet the resourcing requirements for ecologists, and administration, planning and evaluation processes. This will build internal capacity and help to achieve commitments.
- Ensure budgeting, resource planning and team structures have on-going positions allocated to undertake research within the GSA, especially research to inform management of MNES and restoration efforts.
- Apply research undertaken as part of the GSA to on-ground activities in order to improve ecological outcomes and the delivery of commitments.
- Develop processes to ensure research undertaken is informed by ACT strategic priorities.
- Continue to implement research linked to the GSA across other offset areas and reserves that are managed by government (i.e. as for SP research in Throsby and Molonglo). Research projects could be tenure neutral so long as the results ultimately lead to improved management within the offset areas.

Recommendations for future strategic assessments:

- Integrated planning that considers financial and ecological factors needs to be undertaken for the delivery of commitments.
- Expenditure of budget for advanced offsetting may be a strategy to secure values but requires accurate baseline ecological information, sufficient resourcing for management of the offset and resolution of LMA's
- Funding that has to be spent within a specified timeframe, especially the commencement of the offset, may lead to rushed and/or poor decision-making with regards to biodiversity outcomes (both on the specific site, but also in a broader landscape context). This could be improved for future strategic assessments by extending the timeframe for funding to align with costs required to meet the commitments and in line with the long lifespan of the strategic assessment.

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## Appendix A—2017–2018 Annual Report