TAXIWAY BRAVO BIODIVERSITY OFFSET STRATEGY

(EPBC 2008/4170)

Revised February 2022 Approved 11 March 2022





Canberra Airport takes its environmental responsibilities seriously and will do all that is reasonable and practicable to ensure employees, officers, agents, and contractors comply with this Strategy.

Canberra Airport has taken expert advice from Peter Robertson, Wildlife Profiles Pty Ltd and co-author of the Grassland Earless Dragon Recovery Plan, Alison Rowell, Biologist and Environmental Consultant, Professor Stephen Sarre, Institute for Applied Ecology at the University of Canberra and Greening Australia.

Canberra Airport also consulted with the ACT Commissioner for Sustainability and the Environment, Friends of Grasslands, Conservation Council - ACT Region, ACT Environment, Climate Change, Energy and Water, Limestone Plains Group and peak community groups (ACT and NSW) regarding the EPBC Act referrals and listed threatened species on Airport.

This revised February 2022 Taxiway Bravo Biodiversity Offset Strategy (EPBC 2008/4170) was approved by a delegate of the Minister responsible for the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), on 11 March 2022, as required in Condition 2 of the EPBC 2008/4170 approval for the construction of Taxiway Bravo and associated works.

Table of Contents

1.	Introduction	3
2.	Approval Conditions	6
3.	Offset Actions	7
3.1	On Airport Rehabilitation (preferred option)	7
3.2	Acquisition of Offset Land (if required)	11
3.3	University of Canberra Grassland Earless Dragon Research	12
3.4	Alison Rowell, Biologist and Environmental Consultant Research	13
3.5	Timeframes for Completion of Offset Actions	21
4.	References	22

Attachments

- Attachment A Approved Taxiway Bravo and associated works Referral EPBC 2008/4170 notice of approval (3 June 2019)
- Attachment B Figure 1: Taxiway Bravo and Associated Works
- Attachment C Figure 2: Taxiway Bravo NTG Mapping 2018/2019

1. Introduction

A Major Development Plan for the Runway and Taxiway Expansion Program was approved by the then Minister for Infrastructure, Transport, Regional Development and Local Government on 26 August 2004.

The Runway and Taxiway extension to the south was completed in 2006. The construction of Taxiway Bravo to the north was to immediately proceed, however was not undertaken due to delays in obtaining environmental approvals under the EPBC Act.

The construction of the Taxiway Bravo extension provides taxiing aircraft with safe and efficient access between the Terminal and the runway. The direct access to the Terminal, without crossing the main runway, improves the safety and efficiency of the runway system. This reduction in taxiing time reduces fuel burn and greenhouse gas emissions.

The Taxiway Bravo extension is located to the west of Runway 17/35, north of Taxiway Delta and linking with the Runway 17 threshold (refer Figure 1: *Taxiway Bravo and Associated Works*).

An airside security fence and airside road were constructed as part of Stage 1 to meet aviation security requirements and was built partly on the existing airside road north of the Taxiway Bravo extension reserve. Necessary stormwater improvements were also included in Stage 1.

The construction of the Taxiway Bravo and associated works resulted in the removal of 5.7 ha of moderately modified patches of Natural Temperate Grassland which may have contained habitat for the Grassland Earless Dragon and Golden Sun Moth.

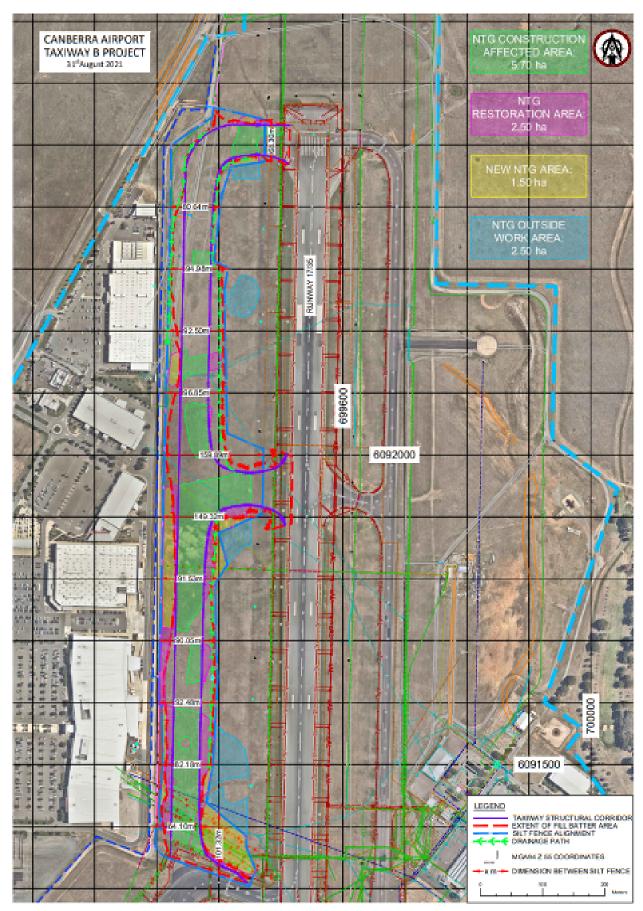
The referral for the Taxiway Bravo and associated works was approved with conditions by a delegate of the Minister responsible for the EPBC Act on 10 December 2008. On 3 June 2019 a delegate of the Minister responsible for the EPBC Act approved a variation to the conditions of approval.

The approval conditions require the approval of this Biodiversity Offset Strategy, which includes two offset options:

- OPTION 1 requires the acquisition of land containing Natural Temperate Grassland and Golden Sun Moth habitat; and
- OPTION 2 is for the rehabilitation of Vegetation within the Canberra Airport lease to meet the definition of Natural Temperate Grassland.

Canberra Airport remains committed to increasing the body of knowledge for these listed threatened species and has continued to choose Option 2, which is to improve native pasture and disturbed sites to meet the definition of Natural Temperate Grassland.

Figure 1: Taxiway Bravo and Associated Works



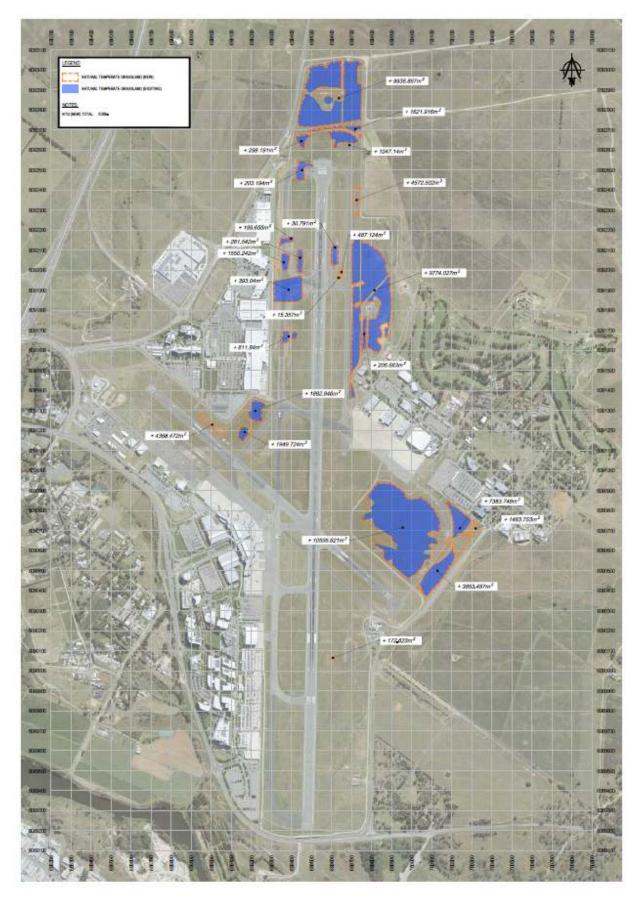


Figure 2: Taxiway Bravo NTG Mapping 2018/2019

Figure 2: *Taxiway Bravo NTG Mapping 2018/2019* shows that there has been an increase of six (6) hectares of new NTG derived from various experiments undertaken over time. It should be noted that the 2018/2019 mapping work was done prior to commencement of construction of the Taxiway Bravo extension.

2. Approval Conditions

The Taxiway Bravo and associated works EPBC 2008/4170 referral was approved with conditions on 10 December 2008 and revised on 3 June 2019 (refer Attachment A).

The revised approved referral Conditions 2 and 2A state that:

- 2. The person taking the action must submit a Biodiversity Offsets Strategy for the Golden Sun Moth, Grassland Earless Dragon and Natural Temperate Grassland to the Minister for approval. The Strategy must include:
 - a. A long-term conservation offset for the removal of habitat for the Golden Sun Moth, Grassland Earless Dragon and Natural Temperate Grassland including;
 - *i.* The acquisition of land containing at least 17.1 hectares of Natural Temperate Grassland and Golden Sun Moth habitat to be conserved in perpetuity; or
 - *ii.* Measures to rehabilitate at least 17.1 hectares of Vegetation within the Canberra Airport Lease to meet the definition of Natural Temperate Grassland.
 - b. Details of the funding, of at least \$141,301, and in kind support valued at least \$33,000 and outcomes of research for the Grassland Earless Dragon over a period of 3 years. (Note: A research project was completed in 2011 at a cost of \$187,881 – refer page 11)
 - c. Timeframes for the completion of all actions outlined in the Strategy, including the acquisition of land or rehabilitation of land to be used as the offset.

The person taking the action must not commence construction unless the Minister has approved the Biodiversity Offset Strategy in writing. The approved Biodiversity Offset Strategy must be implemented.

Note: The management of rehabilitation and any offset must be conducted in conjunction with any other approvals affecting Natural Temperate Grassland in the Canberra Airport site.

2A. If the person taking the action commences implementation of option 2.a.ii. above but is not able to achieve the required outcome within 5 years of commencing implementation (or a longer period if the Minister deems the prevailing conditions for rehabilitation to have been unfavourable) then option 2.a.i. must be implemented.

3. Offset Actions

In response to Condition 2 of the approved referral EPBC 2008/4170, Canberra Airport has prepared this updated Taxiway Bravo Biodiversity Offset Strategy (EPBC 2008/4170).

The Offset Actions are tabularised in Table 1 and discussed in further detail in subsequent sections.

Condition	Offset Action	Refer to Section	Refer to Pages
2.a.i.	Acquisition of Offset Land (if required)	3.2	11
2.a.ii.	On Airport Rehabilitation (preferred option)	3.1	7-11
2.a.ii.	Greening Australia	3.1	8 and 13
2.a.ii.	Alison Rowell, Biologist and Environmental Consultant	3.4	13-20
2.b.	University of Canberra Post Doctorate Research Fellowship Project	3.3	12
2.c.	Timeframes for Completion of Offset Actions	3.5	21

 Table 1: Summarised Offset Actions

3.1 On Airport Rehabilitation (preferred option)

Condition 2.a.ii. requires the rehabilitation of 17.1 hectares within the Canberra Airport Lease. This is Canberra Airport's preferred option in response to Condition 2 of the Taxiway Bravo approval (EPBC 2008/4170).

A number of options have been considered to rehabilitate areas of Native Pasture to meet the definition of Natural Temperate Grassland. These options include:

- The sowing of areas of vegetation on Airport with Natural Temperate Grassland seed. This is dependent on local provenance seed collection, supply and weather conditions;
- Translocation of Grassland (otherwise destroyed by development) in areas of vegetation;
- The spreading of hay bearing Natural Temperate Grassland seed on vegetation;
- Collection of forb seed on Airport to be used in rehabilitation works;
- Tube seeding of forbs in areas of vegetation;
- Replanting forbs (otherwise destroyed by development) in areas of vegetation, and
- Hand seeding forbs in areas of vegetation.

Between May 2011 and December 2013, Canberra Airport provided funding of approximately \$119,933 for a small-scale experimental trial in the eastern grass of the Airport with Greening Australia in association with Alison Rowell, Biologist and Environmental Consultant to investigate the viability of the above methods.

Canberra Airport invited Greening Australia to collect seeds from grass and forbs throughout the Eastern Grass throughout 2020. These seeds were collected, dried and stored with Greening Australia. The outcome to date is that the amounts were not sufficient or the seasonal timing right to use the seed or forbs for the Taxiway Bravo re-seeding program and that Greening Australia used the seed collected in various areas around the ACT.

The Airport's longstanding Biologist and Environmental Consultant, Alison Rowell, continues to monitor/survey the threatened flora and fauna on Airport. Natural Temperate Grassland is also habitat for the Grassland Earless Dragon and Golden Sun Moth and monitoring of these species is undertaken every two years. NTG is surveyed every five years. Refer section 3.4, page 12, for further details.

Canberra Airport will continue to consult Greening Australia and Alison Rowell, Biologist and Environmental Consultant, to source seed and/or forbs to undertake further rehabilitation works within the Canberra Airport Lease.

Table 2 sets out the Action Plan for Rehabilitation and Restoration.

Key Issues	The key issues relating to the rehabilitation include:	
	 Establishment of Natural Temperate Grassland at a ratio of 3ha for every 1ha to be removed; 	
	 Developing weed control, optimum seed and watering application rates; 	
	 Developing broad acre method for seeding; and 	
	 Managing seasonal impacts. 	
Objective	Demonstrate improvement and expansion of existing Natural Temperate Grassland on Airport by rehabilitating vegetation to meet the definition of Natural Temperate Grassland, in accordance with Condition 2.a.ii. of the EPBC 2008/4170 referral.	
Required actions	Undertake rehabilitation and restoration such that:	
and critical thresholds	 The conditions of EPBC 2008/4170 referral are met. 	
	 Rehabilitation of 17.1ha of vegetation to meet the definition of Natural Temperate Grassland, within 5 years of implementation of the plan (or a longer period if the Minister deems the conditions for rehabilitation to be unfavourable). 	

 Table 2: Action Plan for Rehabilitation and Restoration

	 Monitoring, mapping and reporting to be undertaken annually within 5 years of commencement of construction of Taxiway Bravo. A revision of the plan, 5 years after implementation of the plan, will include: Details of extension of time due to unfavourable rehabilitation conditions (as deemed by the Minister) and further rehabilitation and monitoring required; or Details of purchased offset land and plan of management for the offset land.
Methods of Implementation of the Plan	 Identify rehabilitation areas of vegetation within the Airport lease that are unlikely to be affected by future development. Collect, dry and store seed from Master Plan offset property and on-Airport harvesting.
	 Conduct experiment in identified rehabilitation areas to determine:
	 Weed control application rates; Seed application rates; Pre- and Post-seeding watering rates; Broad acre seeding methods; Density and timing of spreading hay bearing seed; and Translocation methods
	 Collect, store and propagate forbs to be sown in areas of vegetation
	 Implement outcomes of experiment in areas of vegetation
Timing	 Establish 17.1ha of Natural Temperate Grassland in areas of vegetation within 5 years of implementation of the plan (or a longer period if the Minister deems the conditions for rehabilitation to be unfavourable).
	 Monitor growth of Natural Temperate Grassland.
	 Revision of plan, 5 years after implementation of the plan.
	 Ongoing site maintenance and supplementary works.

Tasks and Targets

Task	Description	Target
Site Identification	Identify rehabilitation areas of vegetation within the Airport lease that are unlikely to be affected by future development and aviation safety requirements.	Year 1
Seed Collection	Collect, dry and store seed from Master Plan offset property and on- Airport harvesting.	Year 1-4
Further develop Grassland experiment	Conduct additional experiments to determine:	Year 1-2
	 Weed control application rates 	
	 Seed application rates 	
	 Pre- and Post-seeding watering rates 	
	 Broad acre seeding methods 	
	 Density and timing of spreading hay bearing seed 	
	 Translocation methods 	
	 Propagating forbs 	
Broad acre seeding	Using the outcomes of Grassland experiments, broad acre seeding of areas of vegetation within the Airport lease.	Year 2-4
Replanting forbs	Replanting propagated forbs and forbs located within areas affected by the development in areas of vegetation	Year 2-4
Maintain revegetation	Maintain revegetation areas through watering, weed control and additional planting/seeding if required.	Year 2-5
Undertake monitoring	 Monitor success of rehabilitation program (subject to seasonal conditions) 	Annually; within 5 years of commencement of construction.

 Summary report to the Department of the Environment and Energy A final report to the Department of the Environment and Energy 	Within 6 months following completion of construction.
 A final report to the Department of the Environment and Energy verifying compliance 	

The implementation of any rehabilitation works is dependent on weather conditions and the availability of seed, consultant and scientific information.

The rehabilitation of vegetation to Natural Temperate Grassland, including the proposed small-scale experiments and monitoring/surveying of threatened flora and fauna, will provide valuable information to increase the quantity of Natural Temperate Grassland and associated habitat for listed threatened species.

3.2 Acquisition of Offset Land (if required)

If Condition 2(a(ii) is unable to be demonstrated within 5 years of implementation of the plan (or a longer period if the Minister deems the conditions for rehabilitation unfavourable), then Canberra Airport will submit a revision of the plan for approval within 6 months of the expiry of the timeframe for rehabilitation.

The revised plan will include:

- Details of the offset property;
- Details of the management of the offset property.

The purchased land will:

- Be surveyed by a qualified consultant to ascertain the quantity of Grassland and habitat;
- Result in a Conservation Agreement being signed with the Department of the Environment and Energy. If the purchased land contains in excess of 17.1 hectares of Natural Temperate Grassland and Golden Sun Moth habitat, the remainder will be preserved and allocated as an offset for any future development works on Airport; and
- Be managed in accordance with a Plan of Management, to be developed in consultation with the Department of the Environment and Energy and other relevant authorities.

3.3 University of Canberra Grassland Earless Dragon Research

From 2007 to 2009, Canberra Airport provided funding of approximately \$187,881 for a joint Post Doctorate Research Fellowship for Grassland Earless Dragon with the Australian Research Council and the University of Canberra in association with Alison Rowell, Biologist and Environmental Consultant. Canberra Airport continues to contribute to the Airport's consultants' knowledge and advice, ongoing Grassland Earless Dragon monitoring and previous monitoring reports with the aim of collecting population data to be used in ongoing University of Canberra Grassland Earless Dragon research projects. Information obtained from Grassland Earless Dragon specimens located on-Airport will continue be included in research projects to further increase the body of knowledge of this species.

In summary, the primary components of the University of Canberra Post Doctorate Research Fellowship were to:

- 1) Understand the genetic relatedness of the remaining Grassland Earless Dragon population in the ACT and nearby NSW.
- 2) Understand the relationship between grassland height and composition and Grassland Earless Dragon populations.
- 3) Identify key habitat characteristics and features for ongoing management and the reestablishment of Grassland Earless Dragon habitat.
- 4) Inform the Grassland Earless Dragon National Recovery Plan to enable the ongoing management and restoration of Grassland Earless Dragon habitat.

The outcomes of the research included the development of guidelines for the ongoing management of Grassland Earless Dragon habitat so as to maximise the rate of population increase and to restore habitat. The research also provided key insights into the habitat management mechanism for the Grassland Earless Dragon and the effect that climate change might play on those mechanisms through the combination of extreme drought events and habitat degradation.

This work also provided essential management information that helped to maximise the long-term changes of conservation for the Grassland Earless Dragon.

Details of the research outcomes for the Grassland Earless Dragon were published on Canberra Airport's website in the form of hyperlinks to the University of Canberra website and to published articles.

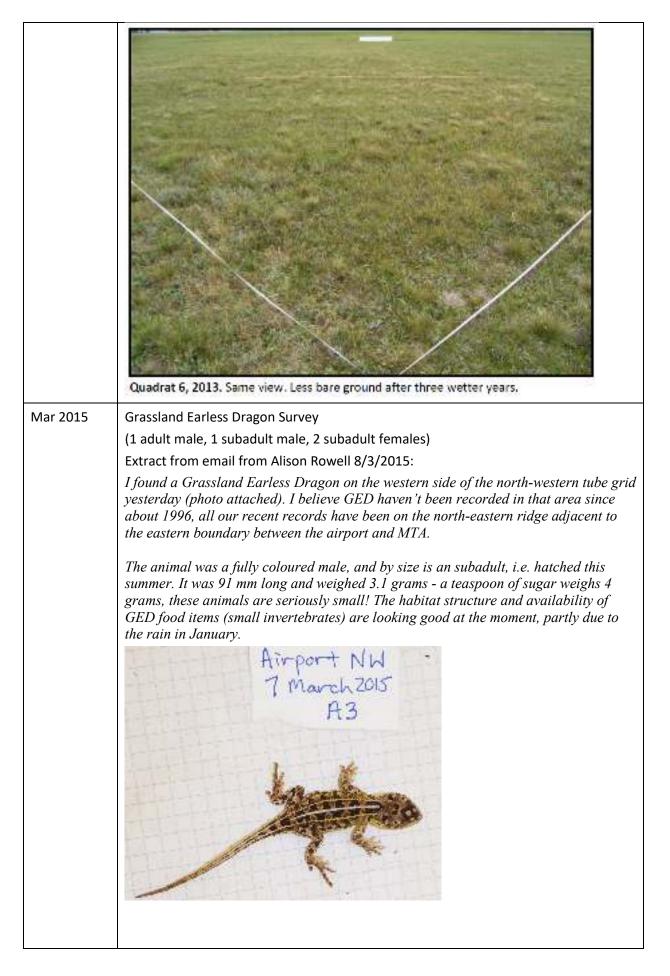
3.4 Alison Rowell, Biologist and Environmental Consultant Research

Details of some of the monitoring/survey research undertaken by Alison Rowell in the period 2009 to 2021 is provided as follows:

Date	Details
2008-2009	NTG Mapping Refer to comments relating to 2013-2014 NTG Remapping below.
2009	Golden Sun Moth Survey The high number of females seen in 2009 was mainly due to a count on a day of very high temperatures. When air temperatures rose above 38°C, the GSM stopped flying and perched at the top of grass stalks where females were more easily detected than usual.
2011	Grassland Earless Dragon Survey (1 adult female) One adult female Grassland Earless Dragon was captured weighed, measured, photographed and a DNA sample was taken on 18 February 2011. This is the first Grassland Earless Dragon recorded on the airport since February 2004.
2011	Golden Sun Moth Survey The very low numbers of GSM recorded in the 2011 survey partly reflect the poor season seen elsewhere in the district that year, but were also carried out too near the end of the flying season to be reliable.
2011-2013	Grassland Trial with Greening Australia / Alison Rowell The aim of the project was to determine key drivers of vegetation condition at Canberra Airport and lift classification of 1.1 hectares of "Eastern Grassland" from native pasture to Natural Temperate Grassland. <i>Extracts from Canberra Airport Grassland Restoration - Final Report prepared by</i> <i>Graham Fifield, Greening Australia, June 2014</i>
	 In 2011, Greening Australia and Canberra Airport, in conjunction with biologist Alison Rowell, began a three year project to determine cost-effective methods to improve the condition of EPBC listed native grasslands. The first project of its kind, the project delivered: Advances in the knowledge, skills and techniques required to restore grasslands; Engagement with community groups and relevant stakeholders; A suite of positive media;

2012	Creaseland Farlass Dragon Survey
2013	Grassland Earless Dragon Survey
	(1 adult female, 1 subadult)
	Extract from email from Alison Rowell 18/3/2013:
	 We found a dragon today, on check 8 of the planned 20 checks for this season. It is an adult female, found 14 metres from the previous location (adult female in February 2011). Photographs confirm that it is a different animal. It was found on the grid in the north-east corner of the airport, on the ridge which is a natural bridge/crossing point to MTA and a popular spot for GED. It is possible that they have been there airport all along, but in numbers too low to reliably detect with our current survey effort. I had been hopeful of finding dragons this season as the habitat is in good shape, and we have seen a couple of natural burrows that look like old Canberra Raspy Cricket burrows that are being used by something other than a Wolf Spider. I will check those with the fibrescope soon. I have also made 80 artificial holes (10 groups of 8) in the habitat area outside the grids, and will also check those for condition and occupation near the end of the season.
	CANADSEAA AIP IS MARCH 2013 FON T/I
2013	Golden Sun Moth Survey
	Refer commentary provided for 2017 GSM Survey.
2013-2014	Remapping of Grasslands at Canberra Airport 2013-14
	Extracts from report prepared by Alison Rowell, Biologist and Environmental Consultant April 2015
	The five-yearly review of the status of the threatened Natural Temperate Grassland (NTG) community at Canberra Airport showed:
	 There were minor changes in the boundaries of the NTG, but the total area of NTG was almost unchanged. There was a decrease in the quality of the NTG community in some areas, mainly related to an increase in weed cover, and winter grazing of one area by cattle. Part of the increased weed cover is likely to be temporary and related to
	seasonal conditions, while some requires increased weed control action.
	The general appearance of the grassland differed between 2008 and 2013, mainly due to differences in the seasonal conditions. The 2008-09 survey was undertaken during an extended dry period, while the 2013 survey followed three years of moderate to heavy spring rains. In 2008-09 grass growth had virtually ceased, litter (dead plant material that rots into the soil) was rare, and there was a large amount of bare ground between tussocks. In 2013, the grasses were denser, litter was more common and bare ground had decreased. Part of the decrease in bare ground was due to increased

species that are cl			tegories present in 2008-09 and 2013, and the r ies.
Table 4. Area Canberra Air		acteristic	species of NTG categories at
NTG quality category	Hectares (2008-09)	Hectares (2013)	Characteristic native species
BSR 1/2 - very high/high	19.4	16.6	Themeda triandra and variety of other native grasses, also high cover of forbs such as Asperula conferta, Brachyscome dentata, Bul bulbose, Chellenthes slebert, Erynglum ovinu Hymenochilus sp., Leptorhynchus squamatus Ophloglossum lusitenicum, Pimeles curvitiore
BSR 3 - moderate	17.8	19.6	Main grasses Austrostipa bigeniculata, Rytidosperma spp., Bothriochioe macra, and common forbs such as Chrysocephalum apiculatum, Goodenia pinnatifida, Lomandra bracteata, Vittadinia muelleri, Wahlenbergia communis.
BSR 4 - low	18.9	19.8	Dominated by grasses, especially Austrostipa bigeniculata, Bothriochloa macra, Chloris truncata, with low cover of common forbs such Chrysocephalum apiculatum, Convolvulus angustissimus, Vittadinia muelleri.
TOTAL NTG	56.1	56.0	-
	2000	30.0	
TOTAL MIG			



	Extract from amail from Alicon Powell 20/2/2015
	Extract from email from Alison Rowell 20/3/2015: We are up to three GED now, two on the western grid and one on the eastern one, which is more dragons than have been seen on the airport since 2001. They are all subadults in good condition (i.e. young of this season). I have three more tube checks to do, two this week and probably one over Easter when I will close the tubes. I then need to do natural burrow checks with the fibrescope a couple of weeks later, when most GED are likely to have chosen a base burrow for overwintering. It is possible that the animals have come in from the recovering population at MTA, as all first sightings were within 50 metres of the boundary fence, but it is equally likely that they were hatched on the airport and that the airport has had a sparse population that we haven't been able to detect recently. The programmed fibrescoping will sample the known habitat area, which may turn up more animals. Extract from email from Alison Rowell 4/4/2015:
	An Easter dragon - we now have eleven captures of four different individuals. All appear to be young of this season and can be expected to breed in spring this year if they survive the winter. I will close the tubes on Monday, weather permitting.
2015	Golden Sun Moth Survey Refer commentary provided for 2017 GSM Survey.
2017	 Grassland Earless Dragon Survey (1 male, from hatchling to subadult) <i>Extracts from Report prepared by Alison Rowell, Biologist and Environmental</i> <i>Consultant, October 2018:</i> A single GED was recorded during the 2017 monitoring season. This animal was captured four times in the north-west quarter of the NW monitoring grid and always within 10 metres of the original point of capture. It was first seen on 27 February as a hatchling 78 mm long and weighing 0.8 gm (Photograph 2) and was recaptured on 1, 11 and 31 March (Photograph 3). When last seen the animal was a 99 mm long subadult weighing 3.4 grams, and its shape and markings suggested that it was a male.
	The second secon

	II MARCH ZOI7 CAN BE RRA A/P B3 NJ Photograph 3. Same GED on 11 March, showing retention of distinctive dorsal markings.
2017	 Golden Sun Moth Survey Extracts from Report prepared by Alison Rowell, Biologist and Environmental Consultant, October 2018 The distribution of GSM at Canberra Airport in 2017 was very similar to that recorded in 2015 and 2013 (Figures 2 and 3), but overall numbers of GSM were lower. 156 males were recorded in 2017, with 612 males seen over a similar survey distance in 2015 and 255 males in 2013. In 2011 a survey that was carried out in early January only recorded 59 flying males and it was concluded that the flying season was nearly over (Figure 4). No female GSM were seen in 2017, 2013 or 2011, and only two were recorded in 2015.
	Variation between years in numbers of flying males recorded at a site is common with GSM as flying activity is greatly affected by even small variations in temperature, wind and cloud. Unless GSM are counted at a site every day during the flying season it is difficult to determine the relative numbers that emerge over a whole season, and the length of the season is also affected by weather conditions. Some years have higher or lower GSM numbers across the whole district, which may be due to the larval mortality rate in the preceding winter being affected by temperature, soil moisture etc. Vegetation transects measured as part of Natural Temperate Grassland mapping in 2013-14 showed that the area north of the main runway where relatively high numbers of GSM are usually recorded also had moderately high cover of Wallaby Grasses (>20%), compared to three other areas of the airport which had 7-12% Wallaby Grasse over (Rowell 2015). Management by slashing tends to favour smaller Wallaby Grasses over some taller native grasses such as Tall Speargrass and Kangaroo Grass, and also maintains the low open structure that is the preferred habitat of GSM.

2017	Grassland Trial
	An area of grassland north of the western arm of the secondary (cross) runway at Canberra Airport was identified as having potential for enhancement through controlling weeds and increasing the cover of native forbs.
	Grassland in two transects and quadrats was measured on 26 May, for assessment against the definition of the critically endangered plant community listed as <i>Natural Temperate Grassland of the South Eastern Highlands</i> under the Commonwealth EPBC Act in 2016. This community replaces the previously listed <i>Natural Temperate Grassland of the Southern Tablelands of NSW and the Australian Capital Territory</i> which was removed from the list of threatened ecological communities on 6 April 2016 (but is still relevant to EPBC Act Part 9 and Part 10 environment approvals made prior to that date).
	The new community is listed as critically endangered (previous community was endangered) and has been described in quantitative terms. The parameters chosen to define the community mean that much native-dominated grassland now reaches the minimum condition threshold of the threatened community, as long as the patch size is greater than 0.1 ha.
	Most of the proposed trial area contains grassland that already qualifies as the critically endangered Natural Temperate Grassland community as now defined, and is also habitat for the critically endangered Golden Sun Moth. These areas are therefore not suitable for enhancement trials involving soil disturbance, dethatching or herbicide application.

2018-2019	Natural Temperate Grassland (NTG) Mapping
	Extract from email from Alison Rowell 29/10/2020: I've been through my tracks, maps and notes for final checks, and can confirm that the distribution of NTG in all areas not covered by my previous emails will remain the same (i.e. all the green polygons are NTG, other colours are not). For some areas this is because there was a sharp edge between NTG and exotic vegetation in those areas (without a buffer of native pasture) and for others because the areas designated as native pasture in the southern half of the airport are lower quality and therefore less likely to be upgraded by the new definition.
2019	Taxiway Bravo Grassland Earless Dragon Pre-construction survey
	A search for the Grassland Earless Dragon was undertaken in the Taxiway Bravo construction zone at Canberra Airport in April and May 2019. 665 burrows were detected and excavated. One Grassland Earless Dragon was found in the northern- most part of the construction zone and was relocated to the known habitat area in the north-eastern part of the Airport.
	CARBERRAR A/F 2/5/17 Cent & D
2019 and	Grassland Earless Dragon (GED) Survey
2021	Extracts from Report by Alison Rowell, Biologist and Environmental Consultant, June 2021:
	The monitoring periods were 1 March-24 April 2019 and 20 February-7 April 2021. The 2019 survey was undertaken after several years of drought and the 2021 survey took place one year after the drought broke.
	No Grassland Earless Dragons were found during monitoring at the permanent grids at the northern end of Canberra Airport in late summer/autumn 2019 and 2021, and one GED was found during pre-construction surveys in May 2019.
	Low numbers were detected at the Airport monitoring grids between 2011 and 2017 but not since, and higher numbers were recorded at the Airport before the millennium drought but crashed after it. This pattern is similar to that seen in the GED population in the Majura Training Area to the north of the Airport. Available information suggests that GED populations in the ACT have not recovered since the breaking of the drought in 2020.
	Canberra Raspy Crickets were also rare in 2021. Their life span is similar to that of GED and they are probably affected by drought in similar ways.
	Habitat structure at the Airport was not affected greatly by the more recent drought as mowing is suspended during very dry periods, but populations of large burrowing invertebrates and GED prey species are likely to have been impacted by the drought that ended in 2020.

3.5 Timeframes for Completion of Offset Actions

The timeframes for completion of Offset Actions are provided in Table 3.

Conservation Offset	Timeframe
Acquisition of land	 Canberra Airport will submit a revision of the plan for approval within 6 months of the expiry of the timeframe for rehabilitation detailing extension of time (if deemed by the Minister) or details of purchased offset land and its plan of management.
Rehabilitation	 Demonstrated within 5 years of implementation of the plan (or a longer period if the Minister deems the conditions for rehabilitation to be unfavourable) as described in Table 2: Methods of Implementation of the Plan.
University of Canberra Grassland Earless Dragon Research	 Outcomes of research to be forwarded to the Department of the Environment and Energy and hyperlinks provided on Canberra Airport website.
	 Completed 2013.
Monitoring and evaluation	 Grassland monitoring on Airport will be undertaken in accordance with Canberra Airport's Threatened Species Management Plan.
	 Evaluation of the rehabilitated Grassland and/or purchased site will be undertaken annually, within 5 years of commencement of construction.
Reporting	 Notify the Department of the Environment and Energy on commencement of implementation of the plan.
	 Updates provided during ongoing consultation meetings.
	 A Summary report will be submitted to the Department of the Environment and Energy within 5 years of commencement of construction.
	 A report verifying compliance will be submitted to the Department of the Environment and Energy within 6 months of completion of construction.

4. References

ACT Government, 2005 A Vision of Splendid of the Grassy Plains Extended: ACT Lowland Native Grassland Conservation Strategy. Action Plan No. 28 (Arts, Heritage and Environment, Canberra).

ACT Government, 1999. Perunga Grasshopper (Perunga ochracea): A vulnerable species. Action Plan 21. Environment ACT, Canberra.

Canberra Airport Approved Major Development Plan, Runway & Taxiway Expansion Program, November 2009

Canberra Airport 2020 Master Plan https://www.canberraairport.com.au/2020-master-plan/

Canberra Airport 2020 Environment Strategy

https://www.canberraairport.com.au/wp-content/uploads/2020/03/CAG-APPROVED-2020-Master-Plan-Environment-Strategy.pdf

Canberra Airport Threatened Species Management Plan, 2010. <u>https://www.canberraairport.com.au/wp-content/uploads/2018/06/Threatened-species-web.pdf</u>

Environment ACT 2005 National Recovery Plan for Natural Temperate Grassland of the Southern Tablelands (NSW and ACT): and endangered ecological community (Environment ACT, Canberra).

Langford C.M, Simpson P.C, Garden D.L., Eddy D.A, Keys M.J, Rehwinkel R. and Johnston W.H. 2004. *Managing Native Pastures for Agriculture and Conservation*. NSW Department of Primary Industries.

Report on ACT Lowland Native Grassland Investigation, Commissioner for Sustainability and the Environment, 19 March 2009

https://envcomm.act.gov.au/wp-content/uploads/2020/08/ocse_actgrasslandreport_0309_full.pdf

Robertson, P. & Cooper, P. (2000). *Recovery Plan for the Grassland Earless Dragon (Tympanocryptis pinguicolla)*. Unpublished report to Environment Australia, Canberra).

Robertson, P & Evans M. (2006). Draft National Action Plan for the Grassland Earless Dragon (*(Tympanocryptis pinguicolla)*. Unpublished report to the Department of Environment, Water, Heritage and the Arts, Canberra).

Sharp S, Dorrough J, Rehwinkel R and Eddy D. 2002 *The Grassy ecosystem management kit: a guide to developing conservation management plans.* Environment ACT, Canberra.

Smith W.J.S & Robertson P. National Recovery Plan for the Striped Legless Lizard (Delma impar) 1999-2003. Unpublished report to Environment Australia, Canberra.

Taxiway Bravo Extension, Canberra Airport, EPBC 2008/4170, 10 December 2008. http://www.environment.gov.au

Greening Australia "Canberra Airport Grassland Restoration – Final Report – What has been achieved to date? Prepared by Graham Fifield, Greening Australia, June 2014.



Department of the Environment and Energy

CORRECTION NOTIFICATION

INFRASTRUCTURE UPGRADE AND CONSTRUCTION AT CANBERRA AIRPORT, ACT (EPBC 2008/4170)

Correction of the Variation Notice of 3 June 2019

The Variation Notice signed on 3 June 2019 contains formatting errors in condition 11.

The Variation Notice incorrectly states:

11. The person taking the action must prepare a **compliance report** for each 12 month period following the date of **commencement of the action**, or as otherwise agreed to in writing by the **Minister**._The person taking the action must:

a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;

b. notify the **Department** by email that a **compliance report** has been published on the **website** within five **business days** of the date of publication;

d. keep all **compliance reports** publicly available on the **website** until this approval expires, unless otherwise agreed to in writing by the **Minister**.

c. exclude or redact **sensitive ecological data** from **compliance reports** published on the website; and

d. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.

Note: Compliance reports may be published on the **Department**'s website. The first **compliance report** may report a period less than 12 months so that it and subsequent compliance reports align with the similar requirement under state approval.

The Variation notice should correctly state:

11. The person taking the action must prepare a **compliance report** for each 12 month period following the date of **commencement of the action**, or as otherwise agreed to in writing by the **Minister**. The person taking the action must:

- a. publish each **compliance report** on the **website** within 60 **business days** following the relevant 12 month period;
- b. notify the **Department** by email that a **compliance report** has been published on the **website** within five **business days** of the date of publication;
- c. keep all **compliance reports** publicly available on the **website** until this approval expires, unless otherwise agreed to in writing by the **Minister**.
- d. exclude or redact **sensitive ecological data** from **compliance reports** published on the website; and
- e. where any **sensitive ecological data** has been excluded from the version published, submit the full **compliance report** to the **Department** within 5 **business days** of publication.

Note: Compliance reports may be published on the **Department**'s website. The first compliance report may report a period less than 12 months so that it and subsequent compliance reports align with the similar requirement under state approval.

For clarity, a full corrected variation notice is attached to this notice.

Person making correction

Name and position	John Foster Director Post Approvals Section
date of correction	20 June 2019

VARIATION OF CONDITIONS ATTACHED TO APPROVAL

TAXIWAY BRAVO EXTENSION, CANBERRA INTERNATIONAL AIRPORT, ACT (EPBC 2008/4170)

This decision to vary conditions of approval is made under section 143 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Approved action	
Person to whom the approval is granted	Canberra Airport Group Pty Ltd
approval is granted	ABN: 14 080 361 548
Approved action	The proposal includes the construction of the Taxiway Bravo extension with high speed taxiway exit and widening of Turning Node Alpha. Other associated works includes stormwater changes and realigned airside road and fence as described in the referral submitted 10 April 2008. [See EPBC Act referral 2008/4170]
ariation	
Variation of conditions attached to approval	The variation is:
	Delete conditions 1, 2 and 5 and replace with new conditions 1, 2 and 5 as shown the attached notice
	Insert new conditions 2A, 3A, 5A, 5B, 5C, 5D, 5E, 6, 7, 8, 9, 10, 11, 12, 13 and 14 as shown the attached notice
	Delete the definitions for Department and Minister and insert new definitions as shown the attached notice
	Insert new definitions for Business day, Commencement of the action, Compliance records, Compliance reports, Incident, Plan(s), Protected Matter, Sensitive ecological data and Website as shown in the attached notice
	Delete Attachment A and replace with new Attachment A as shown the attached notice
Date of effect	This variation has effect on the date the instrument is signed
Person authorised to m	nake decision
Name and position	Greg Manning Assistant Secretary Assessment (WA, SA, NT) and Post Approvals Branch
Signature	Signed

Date of decision 3 June 2019

Date of decision	Conditions attached to approval
As varied on the date this instrument was signed	1. The person taking the action must not clear more than 5.7 ha of Natural Temperate Grassland and may only construct the Taxiway Bravo and associated works consistent with Attachment A.
	A report verifying compliance with this condition must be submitted to the Department within 3 months of completion of construction .
As varied on the date this instrument was signed	2. The person taking the action must submit a Biodiversity Offset Strategy for the Golden Sun Moth, Grassland Earless Dragon and Natural Temperate Grassland to the Minister for approval. The strategy must include:
	 A long-term conservation offset for the removal of habitat for the Golden Sun Moth, Grassland Earless Dragon and Natural Temperate Grassland including:
	 The acquisition of land containing at least 17.1 hectares of Natural Temperate Grassland and Golden Sun Moth habitat to be conserved in perpetuity; or
	 Measures to rehabilitate at least 17.1 hectares of Vegetation quality 4 and 5 within the Canberra Airport Lease to meet the definition of Natural Temperate Grassland.
	 Details of the funding, of at least \$141,301, and in kind support valued at least \$33,000 and outcomes of research for the Grassland Earless Dragon over a period of 3 years.
	c. Timeframes for the completion of all actions outlined in the Strategy, including the acquisition of land or rehabilitation of land to be used as the offset.
	The person taking the action must not commence construction unless the Minister has approved the Biodiversity Offset Strategy in writing. The approved Biodiversity Offset Strategy must be implemented.
	Note: The management of rehabilitation and any offset must be conducted in conjunction with any other approvals affecting Natural Temperate Grassland in the Canberra Airport site.
As varied on the date this instrument was signed	2.A. If the person taking the action commences implementation of option 2.a.ii. above but is not able to achieve the required outcome within 5 years of commencing implementation (or a longer period if the Minister deems the prevailing conditions for rehabilitation to have been unfavourable) then option 2.a.i. must be implemented.
Original dated 10/12/2008	3. The person taking the action must develop and submit a Construction Environment Management Plan (CEMP) to the Minister for approval prior to construction . The plan must include but is not be limited to:
	 measures to reduce indirect construction impacts on Natural Temperate Grassland;
	 measure to reduce impacts on listed threatened species; and
	 management of Natural Temperate Grassland adjacent to Taxiway Bravo to improve the quality of the grassland.
	The approved plan must be implemented.
As varied on the date this instrument was signed	3A. Within 6 months following completion of construction , the person taking the action must revise the Biodiversity Offsets Strategy to identify the impacted natural temperate grassland area that is available for rehabilitation, and specify a program to rehabilitate the land to natural temperate grassland . The revised Biodiversity Offsets Strategy must be submitted to the Minister for approval. The approved plan must be implemented.
Original dated 10/12/2008	4. If the Minister believes that it is necessary or desirable for the better protection of the environment, the Minister may request that the person taking the action make specified revisions to a plan or measure approved pursuant to paragraphs 2 and 3, and submit the revised plan or measure for the Minister 's approval. The person taking the action must comply with any such request. If the Minister approves a revised plan or measure pursuant

Date of decision	Conditions attached to approval	
	to this condition, the person taking the action must implement that plan or measure instead of the plan or measure as originally approved.	
As varied on the date this	Revision of action management plans	
instrument was signed	5. The person taking the action may, at any time, apply to the Minister for a variation to an action management plan or measure approved by the Minister under conditions 2 and 3, or as subsequently revised in accordance with these conditions, by submitting an application in accordance with the requirements of section 143A of the EPBC Act . If the Minister approves a revised action management plan or measure (RAMP) then, from the date specified, the approval holder must implement the RAMP in place of the previous action management plan or measure.	
As varied on the date this instrument was signed	5A. The person taking the action may choose to revise an action management plan or measure approved by the Minister under condition 3, or as subsequently revised in accordance with these conditions, without submitting it for approval under section 143A of the EPBC Act , if the taking of the action in accordance with the RAMP would not be likely to have a new or increased impact .	
As varied on the date this instrument was signed	5B. If the person taking the action makes the choice under condition 5A to revise an action management plan or measure without submitting it for approval, the person taking the action must:	
	 notify the Department in writing that the approved action management plan or measure has been revised and provide the Department with: 	
	i. an electronic copy of the RAMP;	
	an electronic copy of the RAMP marked up with track changes to show the differences between the approved action management plan or measure and the RAMP;	
	iii. an explanation of the differences between the approved action management plan or measure and the RAMP;	
	 the reasons the person taking the action considers that taking the action in accordance with the RAMP would not be likely to have a new or increased impact; and 	
	v. written notice of the date on which the person taking the action will implement the RAMP (RAMP implementation date), being at least 20 business days after the date of providing notice of the revision of the action management plan, or a date agreed to in writing with the Department .	
	b. subject to condition 5D, implement the RAMP from the RAMP implementation date.	
As varied on the date this instrument was signed	5C. The person taking the action may revoke the choice to implement a RAMP under condition 5A at any time by giving written notice to the Department . If the person taking the action revokes the choice under condition 5A, the person taking the action must implement the action management plan or measure in effect immediately previous to that being revoked	
As varied on the date this instrument was signed	5D. If the Minister gives a notice to the person taking the action that the Minister is satisfied that the taking of the action in accordance with the RAMP would be likely to have a new or increased impact , then:	
	a. condition 5A does not apply, or ceases to apply, in relation to the RAMP; and	
	 the person taking the action must implement the action management plan or measure specified by the Minister in the notice. 	
As varied on the date this instrument was signed	5E. At the time of giving the notice under condition 5D, the Minister may also notify that for a specified period of time, condition 5A does not apply for one or more specified action management plans or measures.	

Date of decision	Conditions attached to approval
	Note: Conditions 5A, 5B, 5C and 5D are not intended to limit the operation of section 143A of the EPBC Act which allows the person taking the action to submit a revised action management plan or measure, at any time, to the Minister for approval.
As varied on the date this instrument was signed	6. If the commencement of the action does not occur within 15 years from the date of this approval, then the person taking the action must not commence the action without the prior written agreement of the Minister .
As varied on the date this instrument was signed	<i>Compliance records</i>7. The person taking the action must maintain accurate and complete compliance records.
As varied on the date this instrument was signed	8. If the Department makes a request in writing, the person taking the action must provide electronic copies of compliance records to the Department within the timeframe specified in the request.
	Note: Compliance records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, and or used to verify compliance with the conditions. Summaries of the result of an audit may be published on the Department 's website or through the general media.
As varied on the date this	Preparation and publication of plans
instrument was signed	9. The person taking the action must:
was signed	a. submit plans electronically to the Department for approval by the Minister;
	 b. publish each plan on the website within 20 business days of the date the plan is approved by the Minister or of the date a revised action management plan is submitted to the Minister, unless otherwise agreed to in writing by the Minister;
	 keep plans published on the website until the end date of this approval, unless otherwise agreed to in writing by the Minister.
As varied on the date this instrument was signed	10. The person taking the action must ensure that any monitoring data (including sensitive ecological data), surveys, maps, and other spatial and metadata required under conditions of this approval, is prepared in accordance with the Department's Guidelines for biological survey and mapped data (2018) and submitted electronically to the Department.
As varied on	Annual compliance reporting
the date this instrument was signed. Corrected	11. The person taking the action must prepare a compliance report for each 12 month period following the date of commencement of the action , or as otherwise agreed to in writing by the Minister . The person taking the action must:
	a. publish each compliance report on the website within 60 business days following
	 the relevant 12 month period; notify the Department by email that a compliance report has been published on the website within five business days of the date of publication; keep all compliance reports publicly available on the website until this approval
	expires, unless otherwise agreed to in writing by the Minister . d. exclude or redact sensitive ecological data from compliance reports published on
	 the website; and e. where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication.
	Note: Compliance reports may be published on the Department 's website. The first compliance report may report a period less than 12 months so that it and subsequent compliance reports align with the similar requirement under state approval.
As varied on the date this	Reporting non-compliance
nstrument was signed	12. The person taking the action must notify the Department in writing of any: incident ; non-compliance with the conditions; or non-compliance with the commitments made in plans . The

Date of decision	Conditions attached to approval	
	notification must be given as soon as practicable, and no later than two business days after becoming aware of the incident or non-compliance. The notification must specify:	
	a. the condition which is or may be in breach; and	
	b. a short description of the incident and/or non-compliance.	
As varied on the date this instrument was signed	13. The person taking the action must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in plans as soon as practicable and no later than 10 business days , unless otherwise agreed to in writing by the Minister, after becoming aware of the incident or non-compliance, specifying:	
	 any corrective action or investigation which the person taking the action has already taken or intends to take in the immediate future; 	
	b. the potential impacts of the incident or non-compliance; and	
	c. the method and timing of any remedial action that will be undertaken by the person taking the action.	
As varied on the date this	Management Plans	
instrument was signed	14. All management plans required under this approval should be prepared in line with the Department's Environmental Management Plan Guidelines .	

Date of decision	Definitions attached to approval	
As varied on the date this instrument was signed	Business day means a day that is not a Saturday, a Sunday or a public holiday in the state or territory of the action.	
As varied on the date this instrument was signed	Commencement of the action means the first instance of any specified activity associated with the action including clearance of vegetation and construction of any infrastructure. Commencement does not include minor physical disturbance necessary to:	
	i. undertake pre-clearance surveys or monitoring programs;	
	ii. install signage and /or temporary fencing to prevent unapproved use of the project area;	
	iii. protect environmental and property assets from fire, weeds and pests, including erection or construction of fencing and signage, and maintenance or use of existing surface access tracks, if agreed in writing by the Department .	
As varied on the date this instrument was signed	Compliance records means all documentation or other material in whatever form required to demonstrate compliance with the conditions of approval in the approval holder's possession or that are within the power of the person taking the action to obtain lawfully.	
As varied on the date this	Compliance reports means written reports:	
the date this instrument was signed	i. providing accurate and complete details of compliance, incidents , and non- compliance with the conditions and the plans ;	
	ii. consistent with the Department's Annual Compliance Report Guidelines (2014);	
	iii. include a shapefile of any clearance of any protected matters , or their habitat, undertaken within the relevant 12 month period; and	
	iv. annexing a schedule of all plans prepared and in existence in relation to the conditions during the relevant 12 month period.	
Original dated 10/12/2008	Construction - all work but does not include survey, acquisitions, fencing, test drilling/test excavations, building/road dilapidation surveys, minor clearing (except where endangered ecological communities or threatened flora or fauna species would be affected), or other	

Date of decision	Definitions attached to approval
	activities that will have a minimal environmental impact (e.g. minor access roads, minor adjustments to services/utilities etc).
As varied on the date this instrument was signed	Department - The Australian Government Department currently known as the Department of the Environment or whatever the Department that administers this approval is thereafter called.
As varied on the date this instrument was signed	Incident means any event which has the potential to, or does, impact on protected matter(s).
As varied on the date this instrument was signed	Minister - The Minister responsible for the administration of the <i>Environment Protection and</i> <i>Biodiversity Conservation Act 1999</i> (EPBC Act) including any delegate thereof.
Original dated 10/12/2008	Natural Temperate Grassland - The ecological community referred to as: Natural Temperate Grassland of the Southern Tablelands of NSW and the Australian Capital Territory and described in the document titled 'Advice to the Minister for the Environment and Heritage from the Endangered Species Scientific Subcommittee (ESSS) on a proposal to add an ecological community to Schedule 2 of the Endangered Species Protection Act 1992 (ESP Act)'.
As varied on the date this instrument was signed	Plan(s) means any of the documents required to be prepared, approved by the Minister , and/or implemented by the person taking the action and published on the website in accordance with these conditions (includes action management plans and/or strategies);
As varied on the date this instrument was signed	Protected matter means a matter protected under a controlling provision in Part 3 of the EPBC Act for which this approval has effect.
As varied on the date this instrument was signed	Sensitive ecological data means data as defined in the Australian Government Department of the Environment (2016) <i>Sensitive Ecological Data – Access and Management Policy V1.0.</i>
Original dated 10/12/2008	Vegetation quality 4 and 5 - The area of vegetation mapped as vegetation 4 and 5 in Figure 4.1 of the Canberra Airport Group's Grassland Management Plan Natural Temperate Grasslands at Canberra International Airport.
As varied on the date this instrument was signed	Website means a set of related web pages located under a single domain name attributed to the person taking the action and available to the public.

Date of decision	Annexures
As varied on the date this instrument was signed	Attachment A - Updated plan showing – taxiway bravo, temporary construction zone, natural temperate grassland

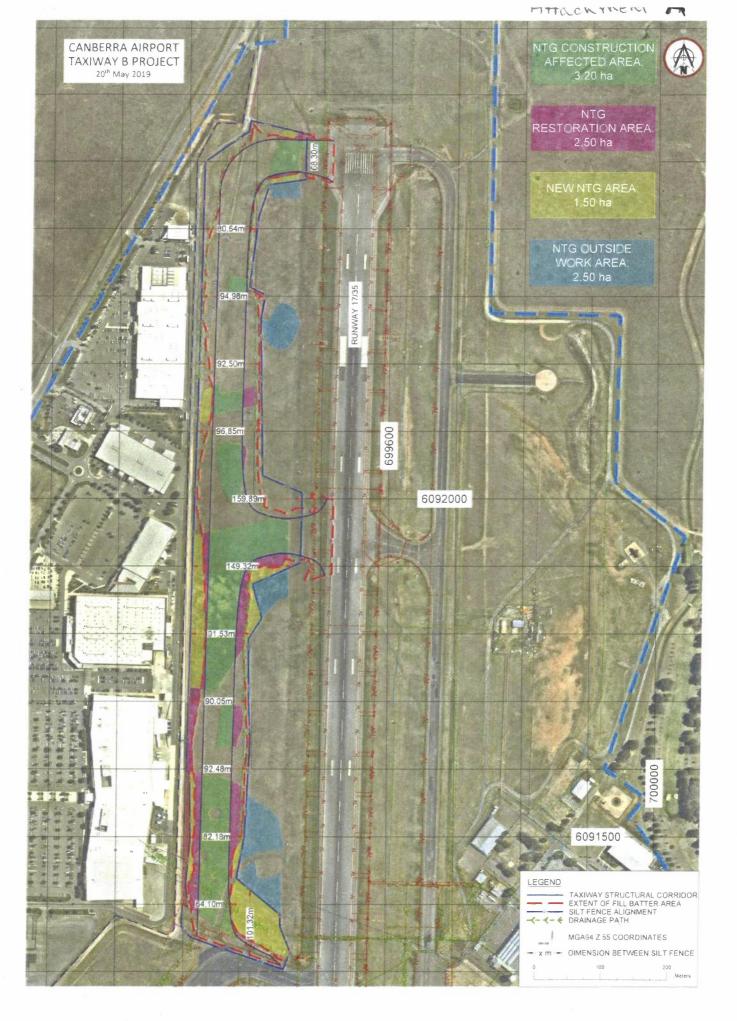


Figure 1: Taxiway Bravo and Associated Works

ATTACHMENT B

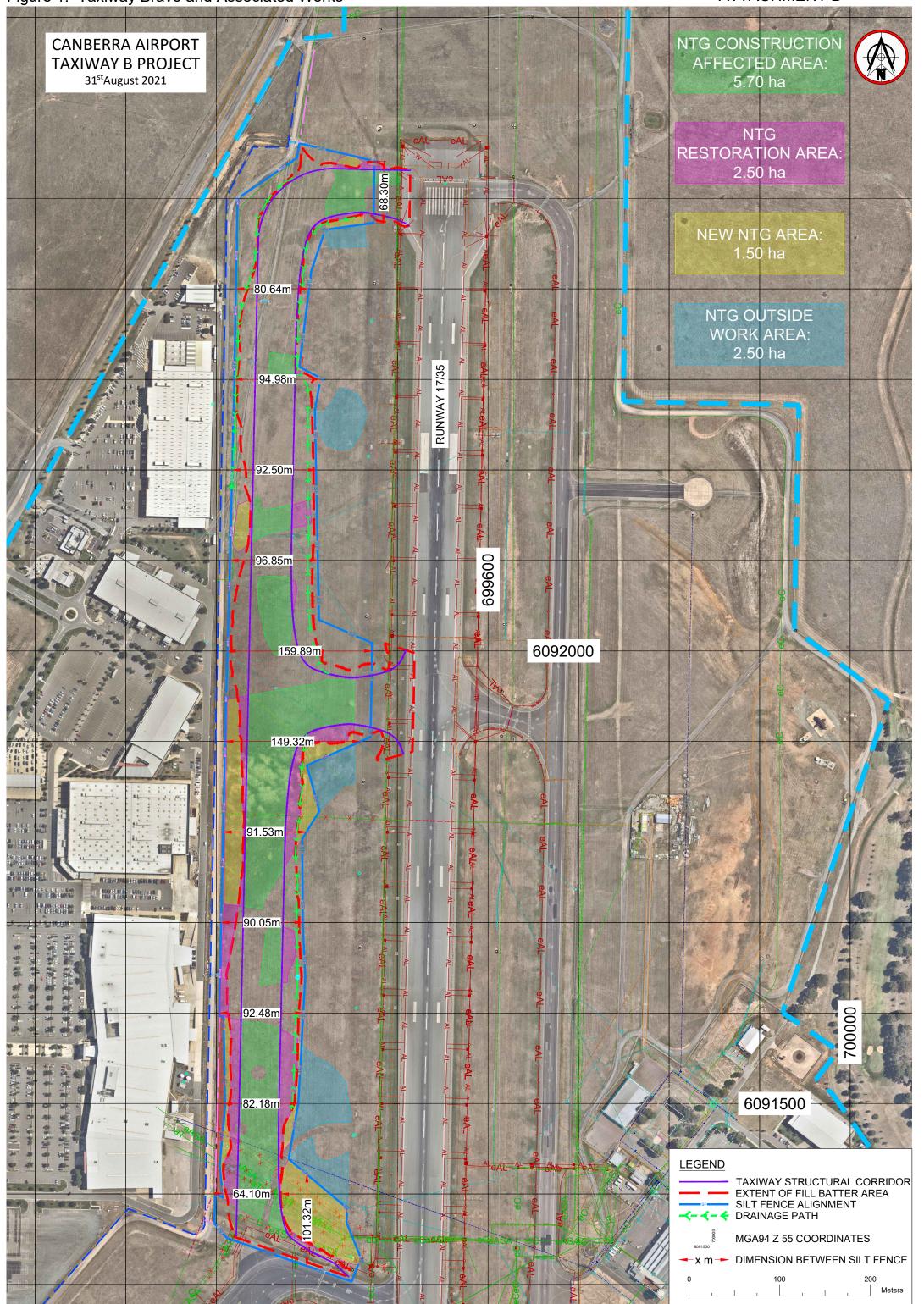


Figure 2: Taxiway Bravo NTG Mapping 2018/2019

ATTACHMENT C

