

# Biodiversity Offset Delivery Plan Implementation Report 2021-2022

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Western Sydney International (Nancy-Bird Walton) Airport (WSI)

# Biodiversity Offset Delivery Plan Implementation Report 2021-2022

Client: Department of Infrastructure, Transport, Regional Development, Communications and the Arts

ABN: 86 267 354 017

## Prepared by

### **AECOM Australia Pty Ltd**

Ngunnawal Country, Civic Quarter, Lvl 4, 68 Northbourne Avenue, GPO Box 1942, Canberra ACT 2601, Australia

T +61 2 6100 0551 [www.aecom.com](http://www.aecom.com)

ABN 20 093 846 925

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## Executive Summary

The Western Sydney International (Nancy-Bird Walton) Airport Plan (Airport Plan) provides the authorisation for Stage 1 of the airport under the *Airports Act 1996* (Cth), and includes a number of environmental conditions the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (Infrastructure) must comply with. Under condition 30 of the Airport Plan, Infrastructure was required to prepare and submit a Biodiversity Offset Delivery Plan (BODP) for approval to compensate for residual significant impacts associated with Stage 1 of the development. The purpose of this report is to provide detail on the implementation activities associated with the BODP that have been undertaken in the 2021-22 reporting period (25 August 2021 to 24 August 2022).

A substantial portion of the direct offsets required for the airport development have been secured through undertaking conservation and restoration activities at Defence Establishment Orchard Hills (DEOH). The DEOH Offset Area is being managed by the Department of Defence (Defence) through a Memorandum of Understanding between Defence and Infrastructure. The Offset Area is being managed in accordance with the draft Offset Plan to improve the quality of habitat for affected threatened biota and plants over a period of 20 years.

By value, Infrastructure has secured over 80% of its offset obligations to date. During this reporting period Infrastructure undertook a procurement process to engage biodiversity specialists to aid in securing its outstanding offset obligations. Implementation activities undertaken in the 2022 reporting period include:

- Obtaining 458 Southern Myotis biodiversity offset credits. These credits were secured, under the NSW Biodiversity Offset Scheme (BOS) in September 2021
- Management activities at DEOH, including weed and pest management
- Australian Botanic Gardens Mount Annan (ABGMA) Threatened Flora Propagation Program (TFPP) Stage 2 operations
- Program conclusion of the Native Seed Production Area program and use of Greening Australia (GA) seed collection and production program.

At the conclusion of the 2022 reporting period, outstanding credits obligations to be considered in the following reporting period are shown in **Table ES-1-1**.

**Table ES-1-1 Outstanding biodiversity credit requirements following the 2021-22 reporting period**

Credit type	Credits required (BBAM)	Equivalent BAM credits	Credits secured in 2021-22	Outstanding credit (BBAM)	Outstanding credit (BAM)
<b>Ecosystem credits</b>					
River Flat Eucalypt Forest (HN526/PCT 835)	2,661	n/a	0	428	n/a
Freshwater wetland (HN630/PCT 1071)	926	545	0	881	519
<b>Species credits</b>					
Spiked Rice-flower <i>Pimelea spicata</i>	107,068	53	0	107,068	53
<i>Dillwynia tenuifolia</i>	540	n/a	0	102	n/a
Southern Myotis <i>Myotis macropus</i>	1,617	1,617	458	400	400

Infrastructure anticipates a significant reduction in outstanding credit obligations in the next reporting period (25 August 2022 to 24 August 2023).

Actions in the 2023 reporting period are anticipated to include finalising procurement activities initiated between July 2022 and October 2022 for the outstanding offset obligations, biodiversity credit availability investigation activities, determining options for securing remaining required biodiversity offset credits, and exploring alternative offset options. Details on these investigations and subsequent purchases of offsets based on these options will be detailed in the 2023 BODP Implementation Report.

## 1.0 Introduction

The Western Sydney International (Nancy-Bird Walton) Airport (WSI) is currently under construction at Badgerys Creek, NSW, with the Stage 1 development including a 3.7 kilometre runway, an integrated domestic and international terminal, and initial capacity for 10 million passengers annually.

The WSI Airport Plan (Airport Plan) provides the authorisation for Stage 1 of the airport under the *Airports Act 1996* (Cth), and includes a number of environmental conditions to mitigate the biodiversity impacts caused by Stage 1 development. Under condition 30 of the Airport Plan, Infrastructure was required to prepare and submit a Biodiversity Offset Delivery Plan (BODP) for approval to compensate for residual significant impacts associated with Stage 1 of the development, specifically to offset impacts on threatened species and communities listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and threatened plants, animals and their habitat listed under the New South Wales (NSW) *Biodiversity Conservation Act 2017* (BC Act).

Under Condition 47(3)<sup>1</sup> of the Airport Plan, Infrastructure is required to report to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) annually on the implementation of the BODP until all biodiversity offsets (including other compensatory measures) have been secured or implemented. The purpose of this report is to provide detail on the implementation activities associated with the BODP that have been undertaken in the 2021-2022 reporting period (25 August 2021 to 24 August 2022). This includes:

- A description of activities undertaken to identify, secure and quantify direct offsets.
- A description of the other compensatory measures that have been delivered and steps taken to identify additional measures.

**Figure 1-1** shows locations where offsets have been investigated or secured, including direct offsets and other compensatory measures, to the end of this reporting period.

### 1.1 Reference documentation

Given the volume of previous reporting and publicly available information, this report does not provide extensive background information. Further information on the development and approval of the BODP, offset requirement, and implementation activities in previous periods can be sourced in relevant reference documentation, available on the WSI web page. Available reports at the point of publishing include:

- Western Sydney Airport Environmental Impact Statement (EIS) 2016, Appendix K2 – Offset Strategy<sup>2</sup>
- Western Sydney Airport Plan, as approved in 2016 (Commonwealth of Australia 2016) and varied in 2020 and 2021<sup>3</sup>
- BODP (Commonwealth of Australia 2018), as approved 24 August 2018<sup>4</sup>
- BODP Implementation Reports<sup>5</sup>
  - 2019: Reporting period 25 August 2018 to 25 August 2019 (GHD 2020)
  - 2020: Reporting period 25 August 2019 to 25 August 2020 (GHD 2021)
  - 2021: Reporting period 25 August 2020 to 24 August 2021 (AECOM 2022).

This report (2022) is required to be published on the website under Condition 47(3) of the Airport Plan.

<sup>1</sup> This was previously condition 39(3) under the 2016 and 2020 Airport Plans, varied to condition 47(3) in September 2021

<sup>2</sup> <https://www.westernsydneyairport.gov.au/sites/default/files/WSA-EIS-Volume-4-Appendix-K2-Offset-strategy.pdf>

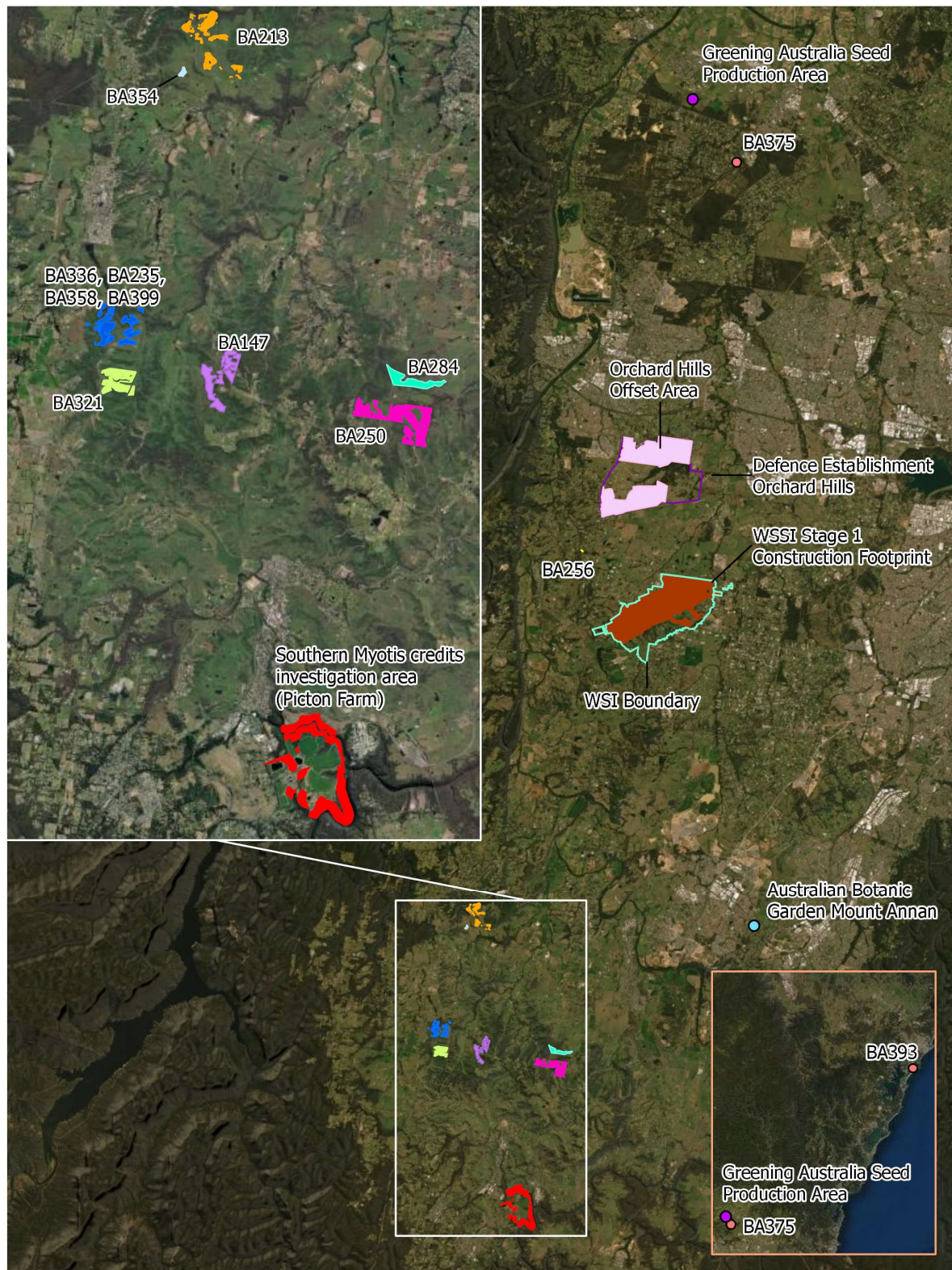
<sup>3</sup> <https://www.westernsydneyairport.gov.au/about/airport-plan>

<sup>4</sup> <https://www.westernsydneyairport.gov.au/environment-heritage/environment/biodiversity-offset-delivery-plan>

<sup>5</sup> <https://www.westernsydneyairport.gov.au/environment-heritage/environment/biodiversity-offset-delivery-plan>



Figure 1-1 BODP implementation offset areas



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## 1.2 Overview of offset requirement

Biodiversity values identified in the BODP as requiring offsetting as a result of Stage 1 of the Development are summarised in **Table 1-1**.

**Table 1-1 Biodiversity offset obligations of Stage 1 of the Project**

Threatened species and communities	
EPBC Act	
<ul style="list-style-type: none"> <li>Habitat for Grey-headed Flying fox (<i>Pteropus poliocephalus</i>) (187.8 hectares (ha))</li> <li>Potential winter foraging habitat for the critically endangered Swift Parrot (<i>Lathamus discolor</i>) (187.8 ha)</li> <li>Habitat for the endangered Spiked Rice-flower (<i>Pimelea spicata</i>) (4,118 clumps over 2.94 ha)</li> <li>Cumberland Plain Woodland (141 ha).</li> </ul>	
BC Act	
Ecosystem-specific offsets:	Species-specific offsets:
<ul style="list-style-type: none"> <li>Grey Box – Forest Red Gum Grassy Woodland on flats in varying condition (224.1 ha)</li> <li>Grey Box – Forest Red Gum Grassy Woodland on shale in varying condition (48.7 ha)</li> <li>Forest Red Gum – Rough-barked Apple Grassy Woodland in varying condition (47.6 ha)</li> <li>Broad-leaved Ironbark – Grey Box – (<i>Melaleuca decora</i>) grassy open forest in varying condition (5.9 ha)</li> <li>Good condition artificial freshwater wetland on floodplain (32.7 ha).</li> </ul>	<ul style="list-style-type: none"> <li>Cumberland Land Snail (<i>Meridolum corneovirens</i>) 183.2 ha of habitat)</li> <li><i>Dillwynia tenuifolia</i> (30 individuals)</li> <li><i>Marsdenia viridiflora</i> subsp. <i>Viridiflora</i> (145 individual stems)</li> <li><i>Pultenaea parviflora</i> (4 individuals)</li> <li>Southern Myotis (<i>Myotis macropus</i>) roosting habitat (71.7 ha of habitat)</li> <li>Spiked Rice-flower (<i>Pimelea spicata</i>) (4,118 clumps over 2.94 ha of habitat).</li> </ul>

In accordance with the EPBC Act Environmental Offsets Policy October 2012, a minimum of 90% of required offsets are required to be 'direct offsets' providing a measurable conservation gain for an impacted protected matter. This includes securing management and conservation of equivalent sites, securing of biodiversity credits from existing sites and acquisition of suitable land. Up to 10% of the offsets can be delivered through 'other compensatory measures' which are actions that lead to benefits for the impacted protected matter such as the funding of research or educational programs.

## 1.3 Biodiversity credit terminology

The NSW Biodiversity Offsets Scheme (BOS) relies on the Biodiversity Assessment Method (BAM) under the BC Act to consistently assess impacts on biodiversity values from a proposed development, as well as improvements in biodiversity values from management actions undertaken at a stewardship site. Prior to the BC Act commencing in August 2017, the NSW BioBanking Scheme similarly relied on the BioBanking Assessment Methodology (BBAM), under the now repealed *Threatened Species Conservation Act 1995* (TSC Act), to consistently assess impacts and improvements on biodiversity values.

'Biodiversity credits' is the standard unit of measure used under both the former BioBanking scheme and the current BOS. Due to changes in the assessment process supporting NSW offsetting schemes between BioBanking and the BOS, the same offset requirement can be expressed as a different number of credits depending on the scheme being referenced. A conversion of an offset requirement between schemes is termed an Assessment of Reasonable Equivalence and is undertaken by NSW Department of Planning and Environment (DPE).

As outlined in the 2021 BODP Implementation Report (GHD 2022), DCCEE has provided endorsement of the project's offset requirement to be expressed in terms of 'biodiversity credits'. The offset requirement for the project was calculated in accordance with the former Framework for Biodiversity Assessment (FBA) (the assessment methodology previously adopted to quantify offsets for major NSW projects), under the BioBanking Scheme. An Assessment of Reasonable Equivalence was undertaken for certain components of the project's offset requirements in February 2020 to convert these credits to the current BOS scheme. The subsequent statement of assessment of reasonable



equivalence of biodiversity credits is included as Appendix B of the 2021 BODP Implementation Report (GHD 2022). As such, the project's residual offset requirement, in biodiversity credits, is expressed herein as both:

- BioBanking (BBAM) credits for biodiversity values established under the TSC Act
- Biodiversity Assessment Method (BAM) for biodiversity values established under the BC Act, determined through an Assessment of Reasonable Equivalence.

Furthermore, both BBAM and BAM biodiversity credits can be expressed as either ecosystem or species credits:

- Ecosystem credit: The class of biodiversity credits created or required for the impact on Endangered ecological communities (EECs), Critically Endangered ecological communities (CEECs) and threatened species habitat for species that can be reliably predicted to occur within a vegetation type according to the BBAM, FBA and BAM.
- Species credit: The class of biodiversity credits created or required for the impact on threatened species that cannot be reliably predicted to use an area of land based on habitat surrogates according to the BBAM, FBA and BAM. The number of species credits is calculated based on targeted surveys.

#### 1.4 Summary of the quantum of secured offsets prior to reporting period

BODP implementation reports were published for the 2018-19, 2019-20 and 2020-21 reporting periods (**Section 1.1**). The following section provides a brief summary of the status of offsets secured prior to the current reporting period and forms the baseline of residual offset obligations discussed in this report.

A substantial portion of the direct offsets required for the Development have been secured through the development of a conservation area at Defence Establishment Orchard Hills (DEOH). The DEOH offset area is proposed for conservation management through a Memorandum of Understanding between Defence and Infrastructure and the implementation of the DEOH Offset Plan.

Direct offsets have also been secured through purchasing of biodiversity credits at Biodiversity Stewardship Agreement (BSA) sites. Once purchased, the biodiversity credits generated through BSA sites are being transferred to Infrastructure. Upon securing the full offset requirement, biodiversity credits will be retired, securing the offset in perpetuity.

The quantum of direct offsets secured to-date through DEOH and BSA sites is provided in **Table 1-2**. By the end of the 2021 reporting period, five credit types had not been reached. Outstanding credit types are discussed in **Section 1.5**.

Ongoing indirect offsets (other compensatory measures) have not been quantified to-date. These measures, including the ABGMA TFPP and GA seed collection and production program, are discussed in **Section 2.4**. These programs have been funded by Infrastructure and details on their progress and operations provided in this report.

Table 1-2 Quantum of biodiversity offsets secured over previous reporting periods (as at August 2021, the start of this reporting period) (BBAM credits)

Credit type	Credits required	Biodiversity credits generated at DEOH Offset Area <sup>1</sup>	Biodiversity credits previously secured at BSA sites			Secured credits available for retirement for the Development		
			2018-19	2019-20	2020-21	Total credits	% of total offset requirement	Offset obligation met?
Ecosystem credits								
Cumberland Plain Woodland (HN528 high, medium, poor and low condition and HN529 high and poor condition)	12,746	9,351	3,805	0	0	13,156	103%	Yes
River Flat Eucalypt Forest (HN526 high, poor and low condition)	2,661	1,979	245	0	0	2,233	84%	No
Shale-gravel Transition Forest (HN512 high and poor condition and HN513 high condition)	359	709	0	0	0	709	197%	Yes
Equivalent ecosystem credits for Grey-headed Flying-fox habitat and Swift Parrot foraging habitat	15,766	12,039	0	4,059	0	16,098	102%	Yes
Freshwater wetland (HN630)	926	41	0	4	0	45	5%	No
Species credits								
Spiked Rice-flower ( <i>Pimelea spicata</i> )	107,068	0	0	0	0	107,068	0%	No
Cumberland Plain Land Snail ( <i>Meridolum corneovirens</i> )	2,441	2,799	0	0	0	2,799	115%	Yes
<i>Dillwynia tenuifolia</i>	540	409	0	29	0	438	81%	No
<i>Marsdenia viridiflora</i> subsp. <i>viridiflora</i>	5,800	14,512	0	0	0	14,512	250%	Yes
<i>Pultenaea parviflora</i>	60	7,486	0	0	0	7,486	12,477%	Yes
Southern Myotis ( <i>Myotis macropus</i> )	1,617	759	0	0	0	759	47%	No

(1) DEOH credits consistent with 2020 update, as updated to reflect addition of land to the Offset Area and discounting of credit generation rates for existing management obligations

## 1.5 Overview of current outstanding offsets

Progress towards securing the required offsets under the BODP has been made in the previous reporting periods for most direct offset requirements. Outstanding offsets are calculated using the total generated and secured biodiversity credit amount following the 2021 period. The offsets are then compared with the direct offset requirement identified in the BODP and are shown in **Table 1-3**.

As described in **Section 1.3**, the project's residual offset requirement is expressed as both BBAM credits and BAM credits, following an Assessment of Reasonable Equivalence undertaken in 2020 for certain components of the project's offset requirements. A request for a revised statement of assessment of reasonable equivalence was submitted to DPE on 24 August 2022 to include equivalence for River Flat Eucalyptus Forest and *Dillwynia tenuifolia*. The requirements for these credits will be expressed as both BBAM and BAM in the 2023 implementation report.

**Table 1-3 Outstanding biodiversity credit requirements following the 2021-22 reporting period**

Credit type	Credits required (BBAM)	Equivalent BAM credits	Outstanding credit (BBAM)	Outstanding credit (BAM)
<b>Ecosystem credits</b>				
River Flat Eucalypt Forest (HN526/PCT 835)	2,661	n/a <sup>(1)</sup>	428	n/a <sup>(1)</sup>
Freshwater wetland (HN630/PCT 1071)	926	545	881	519
<b>Species credits</b>				
Spiked Rice-flower <i>Pimelea spicata</i>	107,068	53	107,068	53
<i>Dillwynia tenuifolia</i>	540	n/a <sup>(1)</sup>	102	n/a <sup>(1)</sup>
Southern Myotis <i>Myotis macropus</i>	1,617	1,617	858	858

(1) Assessment of reasonable equivalence not yet undertaken for this credit requirement, Assessment would be undertaken upon identification of available BSA site and apply to the credit requirement following securing of those credits.

## 2.0 Implementation activities undertaken in the 2022 reporting period

### 2.1 Report scope

This report covers activities in the 2022 reporting period, between 25 August 2021 and 24 August 2022, including:

- A description of activities undertaken to identify, secure and quantify direct offsets (**Section 2.3**)
- A description of the other compensatory measures that have been delivered and steps taken to identify additional measures (**Section 2.4**).

### 2.2 Engagement of Biodiversity Offset Delivery Plan support

Infrastructure engaged AECOM Australia Pty Ltd (AECOM) in 2021 to assist with the ongoing implementation of the BODP. AECOM's role involves assisting with the identification of options to secure the project's remaining offset obligation, documenting annual implementation activities, and providing relevant technical advice.

## 2.3 Direct biodiversity offset actions

The following is a summary of direct offset actions undertaken by Infrastructure involving identification and securing of biodiversity credits through BSA sites.

Biodiversity credits are categorised below as ecosystem credits and species credits as identified in **Table 1-2**.

### 2.3.1 NSW Biodiversity Offset Scheme

#### 2.3.1.1 Identification of available credits

An offsets options report was prepared to identify available biodiversity credits that may be suitable as direct offsets or other compensatory measures for the project (Biosis, 2022). The report focused on the two ecosystem credits and three species credits for which there remained an offset obligation at the commencement of the 2022 reporting period. The options report considered the suitability of each option, referencing like-for-like matches in accordance with the BOS/FBA, and direct offsets in accordance with the EPBC Act Offsets Policy, as well as an assessment against the BODP offset criteria. This report has been used to support the ongoing investigations and activities to secure remaining offsets for the project.

In August 2022, outstanding credits were published on the BOS Demand Register, with Infrastructure commencing an Expression of Interest (EOI) process to identify credits available for purchase. Credit holders who had previously indicated interest were contacted and advised to respond via the Register. The EOI process closed in October 2022, and subsequent procurement activities will be reported in the 2023 implementation report.

#### 2.3.1.2 Ecosystem credits

Potential ecosystem credits in the NSW BOS were identified during the reporting period, as detailed in Section 2.3.1. No ecosystem credits were secured in this period.

Alternative options to secure offsets from Freshwater Wetlands (HN630/ PCT 1071) were investigated during the reporting period, including suitable offsets which are not considered like-for-like but would deliver a net conservation gain. Preliminary discussions with DCCEEW indicate that a paper will need to be prepared, presenting the justification and associated benefits of any divergence from the offset policy. The paper would need to be scientifically robust, establishing a case using offset principles. In the 2023 reporting period, a paper for Freshwater wetland credits will be progressed.

#### 2.3.1.3 Species credits

Direct offsets for species credits were secured during the reporting period through the purchasing of biodiversity credits at BSA sites. Infrastructure purchased 458 Southern Myotis BBAM species credits held by the Sydney Water Corporation from its Picton Farm BSA in September 2021. Sydney Water Corporation entered into a voluntary Biodiversity Stewardship agreement with the Biodiversity Conservation Trust to permanently protect and manage an area around Picton Water Recycling Plant and further improve its biodiversity value. Infrastructure purchased 458 Southern Myotis credits generated at Picton Farm through this agreement under the NSW BOS. Following this purchase, 400 credits of the original 1,617 Southern Myotis BBAM credits are still required.

In accordance with Condition 30(9) of the Airport Plan, Infrastructure provided DCCEEW with shape files identifying the location and boundaries of the BSA on 27 January 2022.

A *Pimelea spicata* expert was engaged in August 2022 to determine the suitability of the Orchard Hills Offset Area, located within DEOH, for offsetting the impacts to *Pimelea spicata*. Elizabeth Norris is an NSW DPE nominated Qualified Expert status for providing expert reports for *Pimelea spicata*. A desktop assessment was undertaken by the Expert, followed by field surveys at DEOH on 9 and 10 August 2022. Although the expert report was not completed during the reporting period, early findings indicated the presence of *Pimelea spicata* potential habitat. This will be further investigated during the 2023 reporting period.



### 2.3.2 Defence Establishment Orchard Hills

A substantial portion of the direct offsets required for the airport development have been secured through undertaking conservation and restoration activities at DEOH. Defence has set aside 978.83 hectares of land at DEOH to provide biodiversity offsets for the development of WSI. This offset area, comprises 938.48 ha of managed vegetation and 40.35 ha of supporting land uses such as tracks and easements. These arrangements have been formalised through a Memorandum of Understanding between Defence and Infrastructure and will be managed under an Offset Plan to improve the quality of habitat for affected threatened biota and plants over a period of 20 years until 2038, with ongoing maintenance thereafter.

#### 2.3.2.1 Orchard Hills Offset Area Offset Plan

The Orchard Hills Offset Area Offset Plan (Offset Plan) was finalised during the reporting period, and was approved by Infrastructure on 25 May 2022 subject to minor updates. The Offset Plan has been published on the WSI web page. The Offset Plan contains objectives and management actions, against which the actions at DEOH have been reported.

While the Offset Plan was being updated, Defence used a base services contractor to deliver on-ground offset works and management actions (**Section 2.3.2.2**) prior to engagement of a specialist contractor to take over management of offset actions (**Section 2.3.2.1**).

#### 2.3.2.2 Engagement of specialists offset management contractor

NSW Local Land Services (LLS) was contracted by Defence to undertake and coordinate ongoing management of the offset area. This contract commenced in July 2022, with baseline surveys and site familiarisation undertaken for the remainder of the reporting period as LLS continued to ramp up activities.

#### 2.3.2.3 Management actions

Maintenance activities during the reporting period were primarily undertaken by the base services contractor to manage grazing pressure and maintain landscapes, as transition to LLS occurred. These activities were focused on weed and pest management, in accordance with offset management actions 4 and 6. Weed management works were undertaken early in the reporting period and are detailed in **Section 2.3.2.3.1**. Rabbits were specifically targeted for management in August 2020 to September 2021.

##### 2.3.2.3.1 Weed management

The Offset Plan recommends weed control works to be undertaken across the offset area, with effort guided by the need to reduce High Threat Exotic plant species cover and exotic plant infestations. Exotic species affect site quality scores, and the removal of these plants therefore assists the offset objectives. Weed management activities at DEOH during the reporting period are described in Table 4.

**Table 4 Weed management activities at DEOH during the reporting period**

Weed	Management activity
African Lovegrass and Fireweed slashing	A total of 36.2 ha of African Lovegrass ( <i>Eragrostis curvula</i> ) and Fireweed ( <i>Senecio madagascariensis</i> ) has been slashed using a tractor mower ( <b>Figure 2-1</b> ).  The ongoing control of these weed species aims to reduce competition for native species growing in these grasslands, namely Kangaroo Grass ( <i>Themeda triandra</i> ) and Barbed Wire Grass ( <i>Cymbopogon australis</i> ). While these native species are also being slashed, they are species noted to benefit from disturbance and should regrow at a healthy rate with expected rains and warmer weather.
Fireweed hand removal	Fireweed ( <i>Senecio madagascariensis</i> ) was hand-removed in the <i>Marsdenia viridifolia</i> plot in the Southern Buffer ( <b>Figure 2-2</b> ). This technique was chosen to mitigate any potential risks to the <i>Marsdenia</i> , which is a

Weed	Management activity
	vulnerable species. Close to all specimens were removed and rafted in trees to dry out.
Crofton weed removal	Crofton weed ( <i>Ageratina adenophora</i> ) was treated throughout August 2021 using manual and slashing techniques ( <b>Figure 2-3</b> ). In areas of small infestations or where sensitive native species were present, the Crofton weed was hand-pulled or treated with a cut and paint technique using Glyphosate Biactive. In the swale, a majority of the Crofton weed was treated using a brush cutter and pole hedger with spraying works to follow. These works aim to reduce the biomass of Crofton Weed in watercourses to reduce competition for native species and to prevent infestations on other areas of DEOH. As a side effect of these works, dead and reshooting blackberry was incidentally treated.



Figure 2-1 **Before and after African Lovegrass and Fireweed slashing**



Figure 2-2 **Before and after Fireweed hand removal**



Figure 2-3 **Before and after** Crofton Weed and dead Blackberry removal

The largest overall threat to achieving the offset objectives is considered to be the encroachment and reestablishment of treated weed species. Weed removal works have been progressing on most areas of DEOH, with a future focus on maintenance works. *Juncus acutus*, *Rubus fruticosus aggregate* (Blackberry), *Lantana camara*, *Callistemon sp.*, and *Olea europea sub. Cuspidata* (African Olive) are considered to be the major weed species threats.

There is a large presence of *J. actus* on DEOH which have been largely sprayed and slashed where possible. This has shown to be effective in controlling the weed. However, this strategy does not eradicate the seed source, so reshooting and germination are expected to occur in warm, high rainfall months. *J. actus* also has the potential to spread through water ways, so it is necessary to be aware of how water moves through DEOH.

The blackberry present on DEOH has not been sprayed during the colder months as it is semi-deciduous and will not uptake chemicals. As the warmer months approach, there is the threat of blackberry reshooting and beginning to grow again.

The continuation of works is imperative to ensure that competition can be reduced for native species as the active growing season begins. The high fruiting ability of *L.camara* also provides a threat as animals will be likely to spread the species to other areas of DEOH.

There has been some evidence of treated specimens reshooting and thus they have required a second treatment.

## 2.4 Other compensatory measures

### 2.4.1 Threatened Flora Propagation Program (TFPP)

Infrastructure has arranged for ABGMA to help establish a longer term potted ex situ *Pimelea spicata* collection at the Mount Annan PlantBank (the Stage 2 TFPP), including 100 individuals from the WSI site for a genetic study. The collection of cuttings from the WSI site was a result of many visits to site over multiple years, based on rain and temperature. The potted collection would provide a source of cutting material to support any future translocation or amenity planting of the *Pimelea spicata* population from the WSI site once the plants are removed.



The Stage 2 TFPP will draw upon the results of the genetic study and experience in propagation techniques gained throughout the Stage 1 TFPP. Funding to maintain the collection has been committed for a period of five years until 2025.

In addition to the 100 *Pimelea spicata* individuals for the TFPP Stage 2 genetic study, ABGMA maintains a collection of *Pimelea spicata* (approximately 350 individuals) and *Marsdenia viridiflora* (approximately 200 individuals) from TFPP Stage 1 for future use. *Pultinaea parviflora* individuals from Stage 1 were collected from ABGMA in July 2020 for use by WSA Co.

#### 2.4.2 Greening Australia (GA) seed collection and production program

A final report was prepared by GA in November 2021 after the conclusion of the GA seed collection production program (GA, 2021). The program was implemented through funding a five-year contract from 2016-2021. The program delivered:

- 15.91 ha of seed production area
- 410,000 individual plants
- Over 80 *Cumberland Plain* species
- 3,381 kg of cumulative seed yield from cropping and wild collection.

The program was concluded in June 2021, no other activities will take place as part of the program.

## 3.0 Conclusion

### 3.1 Outstanding offsets

During the 2021-2022 reporting period (25 August 2021 to 24 August 2022), 458 Southern Myotis credits were identified and secured in September 2021. No other credits were secured between 25 August 2021 to 24 August 2022.

As mentioned in Section 1.5 and **Table 3-1**, biodiversity offsets are still required in relation to two ecosystems and three species.

**Table 3-1 Outstanding biodiversity credit requirements following the 2021-22 reporting period**

Credit type	Credits required (BBAM)	Equivalent BAM credits	Credits secured in 2021-22	Outstanding credit (BBAM)	Outstanding credit (BAM)
<b>Ecosystem credits</b>					
River Flat Eucalypt Forest (HN526 /PCT 835)	2,661	n/a	0	428	n/a
Freshwater wetland (HN630/PCT 1071)	926	545	0	881	519
<b>Species credits</b>					
Spiked Rice-flower <i>Pimelea spicata</i>	107,068	53	0	107,068	53
<i>Dillwynia tenuifolia</i>	540	n/a	0	102	n/a
Southern Myotis <i>Myotis macropus</i>	1,617	1,617	458	400	400



Procurement activities for the outstanding offset obligations commenced in July 2022 and were underway in August 2022. In July 2022, Infrastructure invited tenders for biodiversity credits within one or more of any of the following classes (Credit Classes):

- Up to 428 HN526 BioBanking ecosystem credits or an equivalent number of PCT835 'BC Act' biodiversity ecosystem credits (or Equivalent Credit Classes) for Forest Red Gum – Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion
- Up to 881 HN630 BioBanking ecosystem credits or an equivalent number of PCT1071 'BC Act' biodiversity ecosystem credits (or Equivalent Credit Classes) for *Phragmites australis* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion
- Up to 102 BioBanking species credits or an equivalent number of 'BC Act' biodiversity species credits for *Dillwynia Tenuifolia*
- Up to 400 BioBanking species credits or an equivalent number of 'BC Act' biodiversity species credits for Southern Myotis
- Up to 107,068 BioBanking species credits or an equivalent number of 'BC Act' biodiversity species credits for Spiked Rice-Flower.

As part of the procurement exercise launched in July 2022, Infrastructure has also indicated it may also consider purchasing Equivalent Credit Classes for ecosystem credits if like-for-like credits are not available in the NSW biodiversity credit market on satisfactory terms and it is determined, after consultation with the Department of Climate Change, Energy, the Environment and Water, that the equivalent credit classes are an appropriate means of delivering offsets for WSI.

### 3.2 Anticipated 2022-23 BODP reporting period activities

Actions in the 2023 reporting period are anticipated to include biodiversity credit availability investigation activities, finalising procurement activities initiated between July 2022 and October 2022 for the outstanding offset obligations as listed in Section 3.1 above, determining options for securing remaining required biodiversity offset credits, and exploring alternative offset options. Details on these investigations and subsequent purchases of offsets based on these options will be detailed in the 2023 BODP Implementation Report.

An independent audit for the February 2021 to August 2022 period will be undertaken, to be submitted to DCCEEW by 31 March 2023 as per the requirement under Condition 30(11)(b) of the Airport Plan.

## 4.0 References

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