

Environmental Offset Strategy Performance Report May 2020

Greenback Training Area
EPBC 2011/5896

Greenbank Training Area

Environmental Offset Strategy Performance Report - May 2020

Background

This is the first performance report against the Environmental Offset Strategy (the offset strategy) for EPBC Act Approval 2011/5896 for the construction of additional Defence Training Facilities at the Greenbank Training Area (GBTA), Queensland. Condition 2 of the approval requires Defence to prepare and submit an Environmental Offset Strategy which identifies measures to compensate for the residual adverse impacts from the construction and operation of the Defence training facilities at Greenbank Training Area.

The Greenbank Training Area Environmental Offset Strategy was submitted to the Environment Department on 31 October 2018 and approved by the delegate on 10 December 2018, along with an extension to the period of effect of the approval from 17 January 2012 to June 2029, in order to accommodate the life of the offset strategy delivery period and reporting under the approval.

The offset strategy will be implemented over a ten-year period commencing January 2019 to December 2028. This first report covers the preceding 15 month offset delivery period and is due to the Environment Department on 10 May 2020. Subsequent reports will be submitted 12 months from the date of the previous report. The second report will be due 10 May 2021.

All performance reports against the GBTA offset strategy will be published on the Defence Environmental Compliance website at <http://defence.gov.au/id/Environmental.asp> under the reporting tab for EPBC Act Referral 2011/5896, Construction of Defence Training Facilities, Greenbank Training Area, QLD.

Executive Summary

The establishment of some elements of the offset strategy have been impacted by the combined effects of the National bushfire crisis and COVID-19 pandemic. The main impact of the bushfire crisis was not on the site itself, but on the availability of internal and external parties involved in the implementation of different aspects of the offset strategy. For example, it was not possible to convene an Environmental Advisory Committee in 2019 and as a consequence, some early targets were not met. Delays to actions during the bushfire crisis and COVID-19 will not have an impact on the overall achievement of the offset strategy.

Key on-ground actions required during the reporting period included undertaking baseline surveys and conducting pest and weed management programs. These actions were undertaken but the cameras deployed in the second round of surveys were not able to be collected and remain *in situ*. This may provide an advantageous period of prolonged survey.

Relationships were established with research and monitoring partners and commenced within the time periods required in the offset strategy, however further progress was delayed due to the overriding crises affecting the country.

Contractual engagement of a multi-institution research program that includes the integration of vegetation and animal monitoring and management data, (i.e. habitat suitability) with impacts on effectiveness and usage of the wildlife crossings, (i.e. connectivity and maintenance of the Flinders-Karawatha corridor) is expected by July 2020. This is a slight delay from strategy targets for some aspects of the program, but will accelerate others ahead of scheduled targets.

Summary of progress against the Offset Strategy Completion Criteria and Performance Targets

Legend	
■	Identifies unfulfilled requirement
■	Identifies partially fulfilled or alternative outcome that meets intent
■	Fulfilled
■	Not required in this reporting period
■	Brief rationale for coding

Table 1. Actions against Offset Strategy activities and targets between Dec 2019 and April 2020

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
1. Formally identify offset area and update administrative arrangements to protect the offset area	1.1 Confirm offset location and seek endorsement from Assistant Secretary Estate Plans in Defence.	Site Selection brief signed by Assistant Secretary Estate Plans (ASEP)	December 2018
	See detailed note. This specific requirement is not appropriate at this time, but has no impact on offset management or delivery.		
	1.2 Update Range Standing Orders	Range Standing Orders updated to reflect offset area	On next review
	1.3 Offset area and management requirements uploaded to Garrison and Estate Management System (GEMS)	Environmental Offset Environmental Factors (EFRs) created in GEMS for Training Areas(TA), TA1b, TA2 and Oxley Creek northern exit corridor.	March 2019
	Completed		

Some ongoing actions cannot be assessed adequately in the first reporting period due to the requirement to simultaneously establish, treat and measure against a baseline. These will be reported on in future 12-month periods.

[More detailed summary results and outcomes against relevant criteria for Offset Strategy activities are provided at Page 11 of this report.](#)

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
2. Establish Oxley Creek management framework	2.1 Identification of immediate high value revegetation and weed management works with Oxley Creek Catchment Management Association	Minuted outcomes from on-site meeting provided advice to Defence on practical measures that could be put in place to ensure integration of Oxley Creek northern exit corridor works to contribute to downstream master planning and whole-of-catchment strategies for weed and waterway improvements.	December 2018
	2.2 Collaboratively determine GBTA Oxley Creek management thresholds with Oxley Creek Catchment Authority (OCCA) and GBTA Environmental Advisory Committee (EAC) The Environmental Advisory Committee was not held as planned due to the unavailability of external participants. These immediate requirements (2.1 and 2.2) have been subsumed into other programs of weed control and research. The overall intent of the action with respect to stakeholder engagement and collaboration has been met through Defence meetings with Brisbane and Logan City Councils. Ongoing dialogue with Logan City council and Urban Utilities to discuss collaboration in management of Oxley Creek issues.	Minuted acceptance in of core actions and thresholds with respect to environmental improvements of Oxley Creek northern exit corridor (e.g. weed density, established native replacement vegetation). Monitoring facilities and baseline data uploaded to Garrison and Estate Management System (GEMS). Target thresholds for key taxa (if appropriate) identified and recorded against monitoring facilities in GEMS.	December 2019

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
3. Baseline surveys	3.1 Undertake baseline BioCondition assessment Establishment of benchmarks and baseline data will now occur in 2020-2021 as part of the integrated research program.	Monitoring facilities and monitoring data uploaded to GEMS	June 2019
	3.2 Undertake baseline survey of fauna using live trapping, cameras, sound recorders, secondary evidence, direct observation Baseline monitoring occurred. Significant refinement and expansion will occur under the integrated research program.	Environmental factor records entered or updated in GEMS	June 2019
	3.3 Undertake baseline fauna crossing assessments in TA2, Sandy Creek, and Oxley Creek northern exit corridor	Monitoring facilities and baseline data uploaded to GEMS	June 2020
4. Establish monitoring program	4.1 Establish long-term remote camera and sound monitoring program, ideally in collaboration with Wildlife Preservation Society of QLD at a subset of baseline survey locations. An in-principle agreement with relevant provider was reached. However, finalisation of arrangements under the integrated research program is anticipated early in the next reporting period.	Agreement in place with Wildlife Preservation Society of Queensland (WPSQ) to integrated community-based monitoring Monitoring facilities and data uploaded to GEMS Target thresholds for key taxa (if appropriate) identified and recorded against monitoring facilities in GEMS	June 2019

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
4. Contd. Establish monitoring program	4.2 Establish long-term BioCondition monitoring plots at a sub-set of baseline assessment locations that exhibit current deficiencies against target benchmark conditions. Not yet completed. Contingent on the requirement for the QLD Herbarium to develop benchmarks for some communities. This is included in the integrated research program.	Monitoring facilities and monitoring data uploaded to GEMS Target benchmarks for key habitat attributes identified as thresholds and recorded against monitoring facilities in GEMS (e.g. length course woody debris, weed density)	June 2019
	4.3 Establish nest box monitoring program	Monitoring facilities and monitoring data uploaded to GEMS	December 2022
	4.4 Conduct annual monitoring activities in accordance with finalised arrangements	Monitoring data uploaded to GEMS within 28 days of completion of annual surveys	(Annually until) December 2028
5. Weed eradication and suppression program	5.1 All weeds within offset area identified and treated to the minimum standard required by Queensland weed and pest animal strategy (2016-2020), and all occurrences of class 2 weeds identified and removed Weed treatments were undertaken. Due to lack of follow-up monitoring it is unclear whether "all occurrences of class 2 weeds were identified and removed". This will be re-assessed in the next reporting period and remedial action taken as necessary.	Any "Eradication" or "Containment: Area A" weeds identified within offset area treated Individual monitoring facilities created for each occurrence and target thresholds of "0" individuals recorded against each facility in GEMS	December 2019

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
5. Weed eradication and suppression program	5.2 Eradication or continuous suppression to less than 5% of baseline levels of all class 2 weeds and Weeds of National Significance (WONS) in the offset area.	Monitoring program yields no records of class 2 weed species	December 2023
	5.3 Continuously suppress class 3 weeds to less than 10% of their baseline levels.	No threshold breaches recorded by monitoring program	Ongoing
6. Vertebrate pest management program	6.1 Continue current site-wide pest management arrangements	Camera monitoring program and fauna movement structures research has reduction in detection rate of introduced predators, or no increase from a zero-detection baseline	Ongoing
	6.2 Reactively treat detections of dogs, cats, foxes into offset area noted by monitoring or research programs 7 Wild dogs and 4 foxes removed during pest management activities. Full integration of monitoring and reactive pest removal was not achievable in this reporting period.	Camera monitoring program and fauna movement structures research has reduction in detection rate of introduced predators, or no increase from a zero-detection baseline	Ongoing
	6.3 Reactively treat any incursions of pigs and deer into GBTA Nil detected.	BioCondition monitoring detects no presence or damage to habitat quality caused by pigs or deer	Ongoing

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
7. Other habitat improvement measures	7.1 Increase coarse woody debris in TA2 through opportunistic distribution of material sourced from tree management and other works on site	BioCondition monitoring records 10% increase in coarse woody debris length over baseline	December 2024
	7.2 Opportunistically increase ground shelter in TA2 and TA1b by ensuring coarse woody debris includes, or is supplemented with, hollow timber or other shelter, or is arranged to provide areas of cover	Annual reporting documents activity undertaken. Photographs uploaded against BioCondition monitoring facilities in GEMS	December 2024
	7.3 Fine-scale ecological burning with spot ignitions to achieve mosaic targets set down in RE fire management guidelines and to support achievement of BioCondition sub-canopy layer targets No burns were undertaken in this reporting period, with no detrimental impact as a consequence.	Fire history reflects burn prescriptions in QLD Government Regional Ecosystem Fire Management Guidelines	Ongoing
	7.4 Supplementation of nesting hollows	Monitoring of nest box use indicates uptake by native species.	December 2023
	7.5 Potential localised erosion issues documented No erosion worth registering in GEMS has been recorded. One road rehabilitation issue on the boundary of the offset area will potentially be dealt with through future works.	Notable erosion recorded in GEMS as Environmental Factor Reports	December 2019

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
7. Other habitat improvement measures contd.	7.6 Monitoring of localised erosion	Monitoring facilities recorded in GEMS for all erosion EFRs. Vegetation cover and feature size thresholds defined for all erosion features in GEMS based on no increase in size, and maintaining or increasing current vegetation cover.	June 2024
	7.7 Remediation of localised erosion features that are not stabilised	Monitoring data indicates vegetation and size thresholds have not been exceeded	December 2024
8. Fauna movement measures	8.1 Increase fence permeability for ground-dwelling fauna and koalas in TA2 and Oxley Creek northern exit corridor	Fauna gates and other measures in place. Monitoring data indicates increased fauna movement.	June 2022
	8.2 Selective adjustments to fauna movement structures based on research program	(if possible) Monitoring indicates increased movement by koalas and quolls.	December 2024
	8.3 Establish a Research partnership to: ○ Increase fence permeability for ground-dwelling fauna and koalas in TA2 and Oxley Creek northern exit corridor ○ Establish effectiveness of fauna movement structures under Centenary Highway in maintaining connectivity of TA1a and TA1b ○ If relevant suggest collaborative enhancements to QLD Transport and Main Roads and improve supporting habitat features around fauna crossings	Research paper or report available.	December 2023
	8.4 Conduct annual monitoring The annual program was not defined for this reporting period due to the establishment of baseline and interrupted program. A regular monitoring program will be scoped, undertaken and reported in all future reporting periods.	Annual monitoring data uploaded to GEMS	(Annually until) December 2028

Detailed summary results and outcomes against relevant offset strategy completion criteria

Activity 1 - Formally identify offset area and update administrative arrangements to protect the offset area

This task consists of several parts, two formal administrative procedures (including site selection sign-off and update of Range Standing Orders), and one operational action that allows transactions, projects, incidents, works and monitoring data to be registered against the offset area (creation in GEMS). The former two actions have not been completed due to an ongoing administrative issue that is yet to be resolved.

Ipswich Council have approached Defence through direct correspondence and parliamentary questions seeking to acquire part of the offset area (TA1b). The implications of this potential transaction to Defence management obligations and the Offset Strategy have been the subject of discussion between Defence and the (then) Department of Environment and Energy. The matter is yet to be resolved, but irrespective of the final outcome, it will have no material impact on Defence delivering its offset obligations. However, finalising the administrative designation of the offset as part of the Training Area has been delayed until it is certain it will remain in Defence ownership. In the meantime, the area has been declared an offset, and is being managed in keeping with other requirements of the Offset Strategy.

The core requirement of this activity is creation of the offset record in the estate management system GEMS. This action has been completed.

Activity 2 - Establish Oxley Creek management framework

This requirement has been included within the broader research framework (below). Availability of external parties to participate in site-based meetings meant that early planned meetings did not occur. However, the core requirement will be met and integrated with research investigating the effects of weed infestations on koala and other fauna movements, and the impacts of management actions on maintaining movement corridors such as the Oxley Creek exit into the Flinders-Karawatha corridor. Meetings were held independently with local councils, and an ongoing dialogue is occurring with Logan City Council and Urban Utilities to establish collaborative processes.

Baseline fauna surveys have occurred within the offset area (Fig 1). Sixty remote camera locations were established, and active searches occurred for fauna and secondary indicators of presence (tracks, scats etc.). It is not known how many camera-nights of survey have occurred because the collection of the second deployment of cameras (from 2019) has not yet occurred.

Cameras were stratified across different habitats, at different distance from boundaries of the offset area, to sample trees with obvious use by arboreal mammals, and fauna crossing in the boundary fence. The first deployment recorded four pest species of mammal, five native mammals, six birds and the cane toad (Table 2). All mammal species were recorded using fauna crossings (see Fig 2 for examples). No animals were detected using the underpass and poles under the Centenary Highway corridor. Eastern grey kangaroos were the most widespread species, with foxes, brushtail possums and red-necked wallabies widely distributed across habitats and locations. Other species showed greater fidelity towards specific habitats, but more data is required to firmly establish habitat use patterns across the offset area. Cats were detected on a lower number of cameras, but in high abundance, and with many distinct individuals recorded. The frequent use of boundary crossings adjoining housing, and the breeds detected, indicate domestic cats are entering the offset area. One collared dog was also detected using a fauna crossing. Tracks and other signs supported the patterns revealed by cameras. Analysis of the full monitoring data set (once available) will be used to inform the research program, including ongoing monitoring locations.

There were no detections of koalas or quolls.

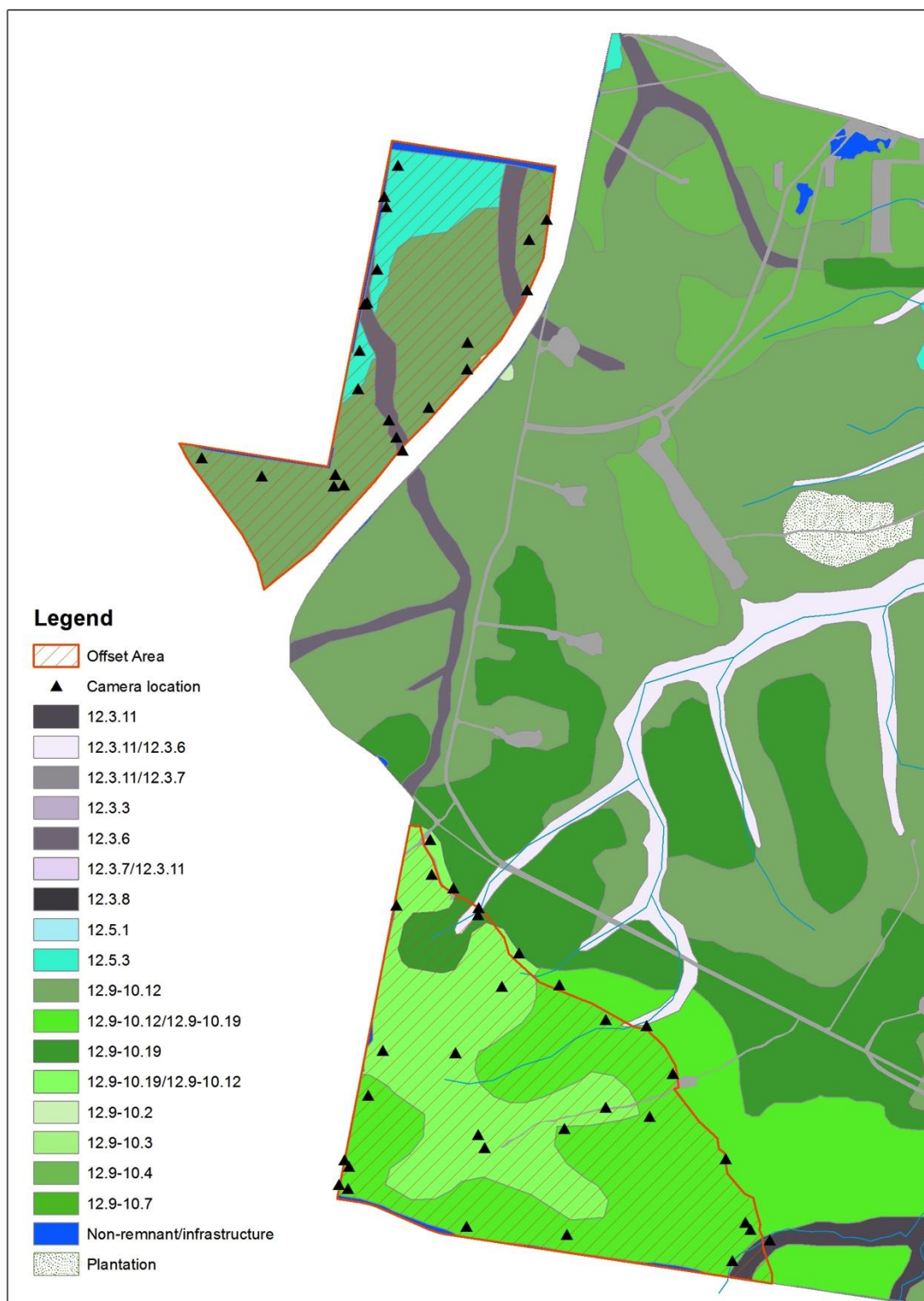


Figure 1. Remote camera locations within the offset area. Note that two cameras were set at several locations where a key feature such as a tree or crossing was paired with a generic camera location.

Table 2. Remote camera sampling results from deployment 1.

Species	Number of locations	Using crossing?
Pests		
<i>Bufo marinus</i> (Cane toad)	1	Yes
<i>Canis lupus</i> (wild dog/dingo)	2	Yes
<i>Felis catus</i> (cat)	4	Yes
<i>Vulpes vulpes</i> (fox)	11	Yes
Native mammals		
<i>Macropus giganteus</i> (eastern grey kangaroo)	16	Yes
<i>Macropus rufogriseus</i> (red-necked wallaby)	10	Yes
<i>Tachyglossus aculeatus</i> (echidna)	1	Yes
<i>Trichosurus vulpechula</i> (brush tail possum)	11	Yes
<i>Wallabia bicolor</i> (swamp wallaby)	7	Yes
Birds		
<i>Alectura lathami</i> (brush turkey)	8	
<i>Corvus orru</i> (Torresian crow)	2	
<i>Dacelo novaeguineae</i> (Kookaburra)	1	
<i>Gymnorhina tibicen</i> (Australian magpie)	1	
<i>Podargus strigoides</i> (tawny frogmouth)	1	
<i>Threskiornis molucca</i> (white ibis)	1	

Activity 4 - Establish monitoring program

The prolonged second deployment of cameras across a stratified design may provide an improved data set against which to refine ongoing monitoring (which will be delivered as part of the integrated research program described under fauna movement measures). However, based on previous work on GBTA and incidental sightings of fauna, it is likely that findings of the original deployment will hold true. Key aspects of this that influence ongoing monitoring design are that:

- Due to their rarity (or absence in the case of quolls), it is unlikely quolls and koalas will be detected with any regularity, if at all, using passive methods such as cameras. Specialist active methods such as detector dogs will need to be strategically used to understand where, and if, these species are utilising the offset area and surrounds.
- Patterns of site use by different vertebrate species are tied to vegetation communities, water, and boundary crossings.
- Spotlighting and other methods (e.g. nest box census) must be integrated into a monitoring program to successfully monitor smaller arboreal species.
- Current fauna crossings provide convenient monitoring locations due to the funnelling of fauna through those locations.

BioCondition monitoring will be undertaken as part of the integrated research program. In order to successfully achieve this, the QLD Herbarium is being engaged to establish benchmarking metrics for communities within the offset area for which benchmarks do not exist.



Figure 2. Example images from a camera monitoring a fauna fence crossing adjoining housing. A diversity of cats were recorded as well as all other terrestrial vertebrates.

Activity 8 - Fauna movement measures

Early results clearly show that some fence crossings are frequently used by native and pest fauna. During initial development of the monitoring and research program in early-mid 2019 the opportunity to combine monitoring of habitat quality and fauna with determining the uptake, use and benefits of nearby fauna crossings was identified. Defence is now finalising the scope and procurement arrangements to establish this integrated research partnership, which will examine the offset site and surrounds, and include the delivery of at least one PhD project that should benefit land management for koala management across South East QLD.