Australian Government
Defence

Environment Offset Strategy Performance Report

May 2023

Greenbank Training Area, QLD

EPBC 2011/5896

Department of Defence

Greenbank Training Area
Environment Offset Strategy Performance Report - May 2023

Background

The May 2022 report is the fourth Environment Performance Report against the Environmental Offset Strategy under EPBC Act Approval 2011/5896, for the construction of additional Defence Training Facilities at the Greenbank Training Area (GBTA), Queensland. Condition two of the approval required Defence to prepare and submit an Environmental Offset Strategy (the Offset Strategy) to identify measures to compensate for residual adverse impacts from the construction and operation of the Defence training facilities at the GBTA.

Condition three of the approval requires Defence to prepare an annual Environment Performance Report (performance report) of progress and detailed information for all requirements under condition two for the GBTA Offset Strategy. The 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 date of effect for EPBC Act Approval 2011/5896, from 17 January 2012 to June 2029. The extension was made to accommodate the life of the offset strategy delivery period and reporting requirements under the approval.

The offset strategy is being implemented over a ten-year period from January 2019 to December 2028. The first performance report was submitted on 15 May 2020 and included progress over the initial 15 month offset delivery period. Subsequent offset performance reports are required to be submitted 12 months from the date of the previous report, by 10 May of each year.

This performance report is due to the Environment Department on 10 May 2023.

Environment Performance reports against the Greenbank Training Area Offset Strategy are published and are publicly available on the Defence Environmental Compliance website at https://www.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.

Greenbank Training Area
Environmental Offset Strategy Performance Report - May 2023

Summary outcomes for the reporting period

The Offset Area continued to be monitored and managed for pests and weeds. Koala records detected during surveys in 2022 were supplemented by two periods of sound recorder deployment during the calling period in October-December, no koala bellows were recorded. Nest boxes were re-surveyed to determine current occupancy rate. Although occupancy at the time of survey had not significantly increased, the overall number of nest boxes in use had risen significantly and indicates high rates of usage. Camera monitoring of fence crossings confirmed the ongoing frequent use of these by cats and foxes. Targeted management of these species is scoped for delivery during 2023 in addition to the routine pest management program. Scopes are currently undergoing internal financial management approval.

The critical activity that occurred during the reporting period was an independent audit in keeping with Offset Strategy requirements. This audit highlighted issues reported in past implementation reports. Most notable among these were the lack of planned surveys due to Covid-19 and site access constraints, as well as data system issues that have prevented straightforward recording and access to past survey data. In response to these findings, and the progress made to date against offset strategy requirements, Defence will propose the following remedial actions in the July compliance report to ensure adequate offset delivery:

1) The improvement period of five years that spanned the pandemic be extended to include the remainder of the offset period. This will improve the overall results of the offset. Improvement actions have continued throughout the offset period to date, but “re-starting” those actions that have not yet occurred will ensure a longer period of investment into improvements and a richer monitoring data set.
2) An updated Offset Strategy document reflecting the changes to timelines, current Defence data systems and changes to offset governance arrangements to provide high-level ongoing oversight and support to implementation of the Offset Strategy.

Summary of progress against Offset Strategy completion criteria and performance targets

Legend
- Identifies unfulfilled requirement
- Identifies partially fulfilled or alternative outcome that meets intent
- Completed, or on or ahead of schedule based on proposed timeframes
- Not required in this reporting period
- Brief rationale for the coding. More detailed summary results against actions are provided in Table 1 below. Note: Some ongoing actions cannot be assessed adequately within the reporting period due to the requirement to simultaneously, establish and treat and measure against a baseline. These will reported against in all future periods.

Table 1. Actions against Offset Strategy activities and targets between May 2022and April 2023

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 on and seek endorsement from Assistant Secretary Estate Plans (ASEP) in Defence. As previously reported, this specific action was not required to secure the offset area.	Site Selection brief signed by ASEP Achieved through equivalent process of endorsement.	December 2018
	1.2 Update Range Standing Orders Action completed.	Training Area Standing Orders updated to reflect offset area. Completed	Completed
	1.3 Offset area and management requirements uploaded to Garrison and Estate Management System (GEMS). Completed – May 2020 Environment Offset Performance Report.	Environmental Offset Environmental Factors (EFRs) created in GEMS for Training Areas TA1b, TA2 and Oxley Creek northern exit corridor.	March 2019 Completed.

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 In accordance with management audit - Partially completed, as no specific practical measures were identified during site visits and meetings not formally minuted.
	2.2 Collaboratively determine GBTA Oxley Creek management thresholds with Oxley Creek Catchment Authority (OCCA) and GBTA Environmental Advisory Committee (EAC).	Minuted acceptance by EAC 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 GEMS. Target thresholds for key taxa (if appropriate) identified and recorded against monitoring facilities in GEMS.	December 2019 As per 2020 implementation report.
3. Baseline surveys	3.1 Undertake baseline BioCondition assessment. Not yet undertaken. Photometric recording of vegetation condition is available and it has the potential to reconstruct assessments based on updated field work under investigation with QLD herbarium.	Monitoring facilities and monitoring data uploaded to GEMS.	June 2019 Timeline to be revised.

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
	3.2 Undertake baseline survey of fauna using live trapping, cameras, sound recorders, secondary evidence, and direct observation. Note an internal audit finding suggests baselines not complete, and not centrally stored and accessible. Remedial actions detailed in audit report. Extensive baseline data has been collected as per previous implementation reports. Updated Offset Strategy will refine this by subject matters.	Environmental factor records entered or updated in GEMS.	June 2019 Timeline to be revised.
	3.3 Undertake baseline fauna crossing assessments in TA2, Sandy Creek, and Oxley Creek northern exit corridor. As above at 3.2.	Monitoring facilities and baseline data uploaded to GEMS. Data has not been uploaded to GEMS due to a lack of system function. This is currently being remedied.	June 2020 Timeline to be revised.
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. This and related actions have been partially conducted, but the combined research/monitoring program is one of the elements to be adjusted in the updated Offset Strategy. Cameras and sound recorders were deployed during this reporting period. No significant changes to knowledge of site vertebrate faunas was revealed by this monitoring. Automated bird call identification protocols are still being run across sound recorder data. The refined program will ensure a more consistent deployment.	Agreement in place with 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 Timeline to be revised.

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. As per above 3.1. Not yet undertaken. Photometric recording of vegetation condition is available and has the potential to reconstruct assessments based on updated field work under investigation with QLD herbarium. Meeting scheduled for 11 May 2023.	Agreement in place with 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 Timeline to be revised.
	4.3 Establish nest box monitoring program Action completed.	Monitoring facilities and monitoring data uploaded to GEMS. Data has not been uploaded to GEMS due to a lack of system function. This is currently being remedied.	December 2022 Completed.
	4.4 Conduct annual monitoring activities in accordance with finalised arrangements This and other related actions have been partially conducted, however the combined research/ monitoring program is one of the elements to be adjusted in the updated Offsets Strategy.	Monitoring data uploaded to GEMS within 28 days of completion of annual surveys. Data has not been uploaded to GEMS due to a lack of system function. This is currently being remedied.	(Annually until) December 2028 Timeline and specifics of the data systems to be revised.
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.	Any “Eradication” or “Containment: Area A” weeds identified within the 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
	A total of 53 days of treatment were delivered a cross the Offset Area. Priority treatment of weeds was recommended with a medium to high priority focus on weed species listed within the BONS, WONS and the Biosecurity Act 2014, these species treated in accordance with the class 1, class 2 and class 3 weeds as listed in the biosecurity act.	Data has not been uploaded to GEMS due to a lack of system function. This is currently being remedied.	
	5.2 Eradication or continuous suppression to less than 5% of baseline levels of all class 2 weeds and WONS in the offset area. Weed treatments were undertaken as per above.	Monitoring program yields no records of class 2 weed species. QLD weed strategy updated to *Queensland invasive plants and animals strategy 2019–2024*. Offset Strategy may be updated to suit.	December 2023 Target specifics and timeline to be revised.
	5.3 Continuously suppress class 3 weeds to less than 10% of their baseline levels. Weed treatments were undertaken as per above.	No threshold breaches recorded by monitoring program. Data from 2023 monitoring following treatment program not yet available. Data has not been uploaded to GEMS due to a lack of system function. This is currently being remedied.	Ongoing
6. Vertebrate pest management program	6.1 Continue current site-wide pest management	Camera monitoring program and fauna movement structures research have 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. Increased fox and cat control being conducted. Continuation of regular programs as per previous reports.	Camera monitoring program and fauna movement structures research have reduction in detection rate of introduced predators, or no increase from a zero-detection baseline.	Ongoing

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
	6.3 Reactively treat any incursions of pigs and deer into GBTA. Nil detected.	Monitoring detects no presence or damage to habitat quality caused by pigs or deer.	Ongoing
7. Other habitat improvement measures	7.1 Increase course woody debris in TA2 through opportunistic distribution of material sourced from tree management and other works on site.	BioCondition monitoring records 10% increase in course woody debris length over baseline.	December 2024
	7.2 Opportunistically increase ground shelter in TA2 and TA1b by ensuring course woody debris includes, or is supplemented with, hollow timber or other shelter, or is arranged to provide areas of cover.	Annual reporting documents activity has been 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 Burns were undertaken in previous two reporting periods. A small area of TA 2 was burnt in February 2023.	Fire history reflects burn prescriptions in QLD Government Regional Ecosystem Fire Management Guidelines.	Ongoing
	7.4 Supplementation of nesting hollows. 250 Nest boxes installed as per previous reporting.	Monitoring of nest box use indicates uptake by native species. Monitoring results indicated 22% occupancy of nest boxes at time of survey, primarily by possums and gliders, with 63% of boxes showing signs of use by native fauna.	December 2023
	7.5 Potential localised erosion issues documented. Minor erosion along an internal creek line has been reactivated by major flood events. A record of this has been created in GEMS.	Notable erosion recorded in GEMS as EFRs.	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 stakes have been placed into the stream bed to monitor headwall progression and potential for natural stabilisation during lower rainfall period.	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. Monitoring details recorded in the Environmental Factor Module in GEMS with photographic record. Quantitative data to be stored in updated GEMS monitoring function, once completed.	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. Initial advice from researchers is that the fence line is readily crossed by koalas and quolls. This and related actions have been partially conducted, but the combined research/monitoring program is one of the elements to be adjusted in the updated Offset Strategy.	Fauna gates and other measures in place. Monitoring data indicates increased fauna movement. Gates and informal crossings are in place, but no additional crossings have been added due to advice that the fenceline does not present a significant movement barrier. Data has not been uploaded to GEMS due to a lack of system function. This is currently being remedied.	June 2022
	8.2 Selective adjustments to fauna movement structures based on research program. This and related actions have been partially conducted, but the combined research/ monitoring program is one of the elements to be adjusted in the updated Offset Strategy.	(if possible) Monitoring indicates increased movement by koalas and quolls.	December 2024 Timeline to be revised.

Activity	Description of proposed works	Key Performance Indicator	Timeframe for completion
	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. This and related actions have been partially conducted, but the combined research/ monitoring program is one of the elements to be adjusted in the updated Offset Strategy.	Research paper or report available.	December 2023 Partnership in final contract negotiations. Scope and details agreed.
	8.4 Conduct annual monitoring As above with respect to more general issues with research and monitoring. Cameras were set to monitor formal crossings. However, alternative methods will be required for local species.	Annual monitoring data uploaded to GEMS Data has not been uploaded to GEMS due to a lack of system function. This is currently being remedied.	(Annually until) December 2028

Detailed summary results and outcomes against relevant criteria

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

The offset area has been agreed by all relevant parties and registered in GEMS. Final wording for updated Training Area Standing orders and boundary signage has been published. The area has been identified and protected from harmful activities since commencement of the offset period and signage repeating standing order requirements has been installed around the perimeter to ensure all site users are aware of the status and use of the area.

Activity 2 - Establish Oxley Creek management framework

This requirement is ongoing and adaptive based on the capacity of external parties to attend and integrate programs of works with Defence. The environmental advisory committee for the site will meet for the first time since the pandemic in on 30 May 2023.

Activity 3 - Baseline surveys

Baseline surveys have occurred as per previous reporting. However, and internal audit has identified that availbility of results and completeness of baselines require remedial action. This will be part of the re-scheduling of activities proposed in the updated Strategy to be submitted as part of July 2023 compliance reporting.

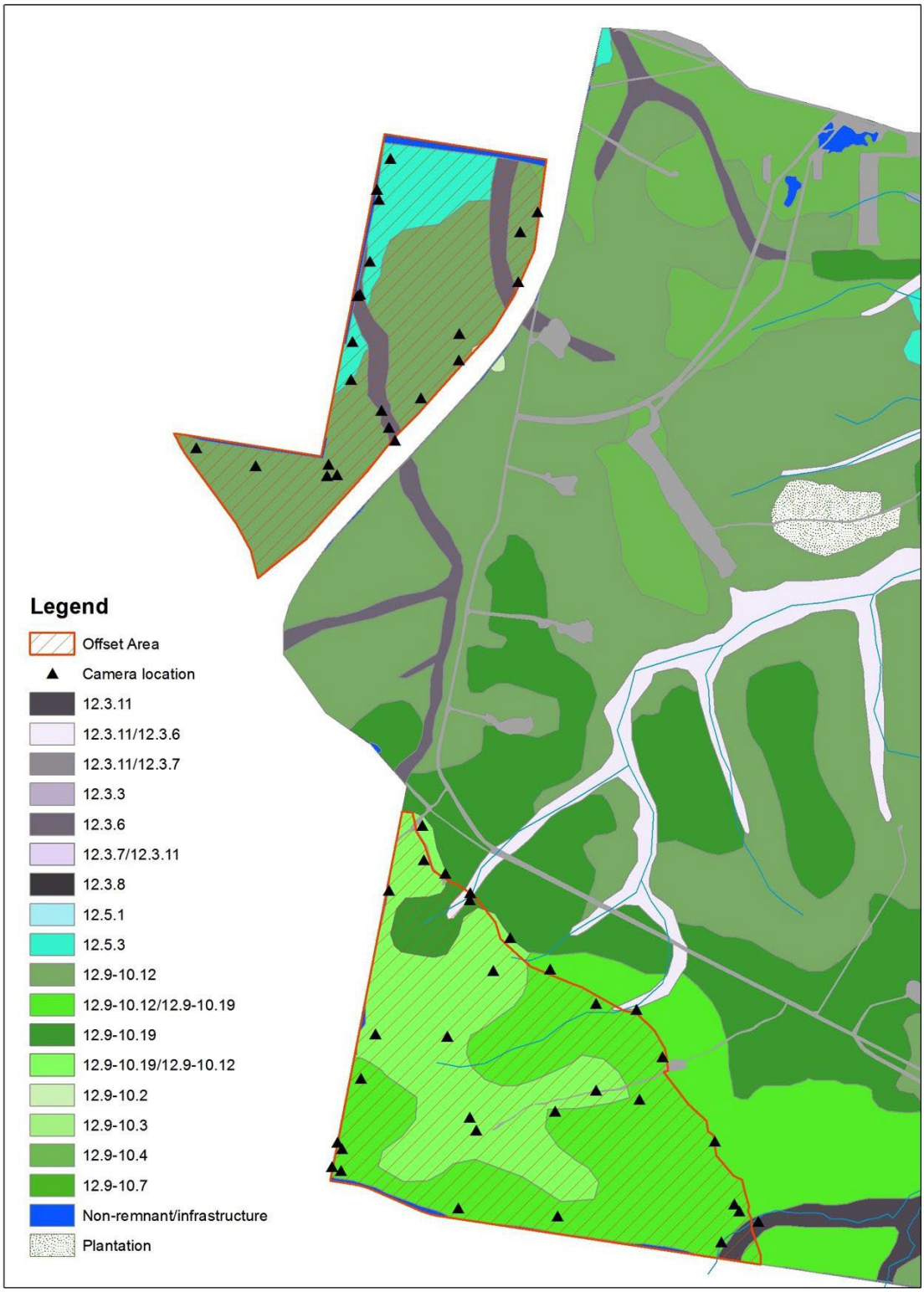

Figure 1. Remote camera locations within the offset area.

Table 2. Remote camera species detections

Species

Pests	
Bufo marinus (Cane toad)	No
Canis lupus (wild dog/dingo)	No
Felis cattus (cat)	No
Vulpes vulpes (fox)	No
Oryctolagus cuniculus (rabbit)	Yes
Streptopelia chinensis (spotted turtle dove)	Yes
Native mammals	
Macropus giganteus (eastern grey kangaroo)	No
Macropus rufogriseus (red-necked wallaby)	No
Tachygolssus aculeatus (echidna)	No
Trichosurus vulpechula (brush tail possum)	No
Wallabia bicolor (swamp wallaby)	No
Antechinus flavipes? (yellow-footed antechinus)	Yes
Petaurus breviceps (sugar glider)	Yes
Pseudocheirus peregrinus (common ringtail possum)	Yes
Native Birds	
Alectura lathami (brush turkey)	No
Corvus orru (Torresian crow)	No
Dacelo novaeguineae (Kookaburra)	No
Gymnorhina tibicen (Australian magpie)	No
Podargus strigoides (tawny frogmouth)	No
Threskiornis molucca (white ibis)	No
Leucosarcia melanoleuca (wonga pigeon)	Yes
Native reptiles	
Varanus gouldii (sand goanna)	Yes
Pogona barbata (bearded dragon)	Yes

Activity 4 - Establish monitoring program

The monitoring program will be a key component of the revised offset strategy to be submitted in July 2023. However, monitoring is ongoing and will be improved by the updates. For example, nest box monitoring across 2018-2023 is shown in Table 2 below, and shows the significant increase in nest boxes as part of the Offset Area improvement in 2021 (note figures are property-wide, but all new boxes in 2021 were within the offset area).

Table 2. Nest box monitoring results 2023 and prior.

	2018	2019	2020	2021	2023
Glider species	3	1	2*	8	12
Common Brushtail possum	5	6	4	30	53*
Nesting material	14	14	19	25	118
Empty	14	11	7	223	117
European honeybees	0	1	1	1	0
Other	0	1	0	3	4
Total number of nest boxes	36	34	33	290	295
Proportion of nest boxes with gliders or possums	22%	21%	18%	20%	22%

Activity 5 – Weed Eradication and Suppression Program

Priority treatment of weeds was completed with a medium to high priority focus on weed species listed within the BONS, WONS and the *Biosecurity Act 2014*, these species treated in accordance with the class 1, class 2 and class 3 weeds as listed in the biosecurity act. The works included in TA1B and TA2 included all weed management, monitoring and control along all external boundaries and managing the external edges of the training area to control and manage garden escape weeds as listed below in table 2. A total of 53 days were allocated for weed management across the offset area. Tables 3 and 4 below include a full list of species treated.

Table 2. Weeds treated in Training Area 1B

Grasses		
Scientific Name	**Common Name**	**Management approach**
Narrow-leaved carpet grass	*Axonopus fissifolius*	Foliar Spray
Rhodes grass	*Chloris gayana*	Foliar Spray
Summer Grass	*Digitaria ciliaris*	Foliar Spray
Common Barnyard grass	*Echinochloa crus-galli*	Foliar Spray
Crowsfoot grass	*Eleusine indica*	Foliar Spray
Red natal grass	*Melinis repens*	Foliar Spray
Winter grass	*Poa annua*	Foliar Spray
Slender pigeon grass	*Setaria parviflora*	Foliar Spray
Johnson Grass	*Sorghum halepense*	Foliar Spray
Signal grass	*Urochloa decumbens*	Foliar Spray
Vines:		
Scientific Name	**Common Name**	**Management approach**
Climbing asparagus fern	*Asparagus africanus* Cut	Cut Stump/Hand Pull/Foliar Spray
Lantana	*Lantana camara* Cut	Cut Stump/Foliar Spray
Creeping Lantana	*Lantana montevidensis*	Foliar Spray
Phasey bean	*Macroptilium lathyroides*	Foliar Spray
Glycine	*Neonotonia wightii*	Cut Stump/Hand Pull/Foliar Spray
Corky passion vine	*Passiflora suberosa*	Cut Stump/Hand Pull/Foliar Spray
White passionflower	*Passiflora subpeltata*	Cut Stump/Hand Pull/Foliar Spray
Stinking passionflower	*Passiflora foetida*	Cut Stump/Hand Pull/Foliar Spray
Brazilian nightshade	*Solanum seaforthianum*	Foliar Spray
Singapore daisy	*Sphagneticola trilobata*	*trilobata* Foliar Spray.
Shrubs and Herbaceous		
Scientific Name	**Common Name**	**Management approach**
Crofton weed	*Ageratina adenophora*	Foliar Spray
Mistflower	*Ageratina riparia*	Foliar Spray
Billygoat weed	*Ageratum conyzoides*	Foliar Spray
Blue billygoat weed	*Ageratum houstonianum*	Foliar Spray
Groundsel bush	*Baccharis halimifolia*	Cut Stump/Foliar Spray
Cobblers' pegs	*Bidens pilosa*	Foliar Spray
Mother-of-millions	*Bryophyllum delagoense*	Foliar Spray
Shepherds purse	*Capsella bursa-pastoris*	Foliar Spray
Larkdaisy	*Centratherum punctatum*	Foliar Spray
Asthma plant	*Chamaesyce hirta*	Foliar Spray
Flaxleaf fleabane	*Conyza bonariensis*	Foliar Spray
Canadian fleabane	*Conyza canadensis var. Pusilla*	Foliar Spray
Tall fleabane	*Conyza sumatrensis*	Foliar Spray
Thickhead	Crassocephalum crepidioides	Foliar Spray
Gomphrena weed	Gomphrena celosioides	Foliar Spray
Blue heliotrope	Heliotropium amplexicaule	Foliar Spray
Mock Orange	Murraya paniculata	Cut Stump/Foliar Spray
Ochna	Ochna serrulata	Foliar Spray
Creeping oxalis	Oxalis corniculata	Foliar Spray
Velvet tree pear	Opuntia tomentosa	Frill/Basal Bark/Foliar Spray
Umbrella tree	Schefflera actinophylla	Frill/Basal Bark/Foliar Spray
Easter cassia	Senna pendula var Glabrata	Cut Stump/Foliar Spray
Flannel weed	Sida cordifolia	Foliar Spray
Common sida	Sida rhombifolia	Foliar Spray
Devils' fig	Solanum torvum	Cut Stump/Foliar Spray
Giant devil's fig	Solanum chrysotrichum	Cut Stump/Foliar Spray
Blackberry nightshade	Solanum nigrum	Foliar Spray
Yellow bells	Tecoma stans	Frill/Basal Bark/Foliar Spray

Table 3. Weeds treated in Training Area 2.

Grasses		
Scientific Name	**Common Name**	**Management approach**
Narrow-leaved carpet grass	*Axonopus fissifolius*	Foliar Spray
Rhodes grass	*Chloris gayana*	Foliar Spray
Summer Grass	*Digitaria ciliaris*	Foliar Spray
Common Barnyard grass	*Echinochloa crus-galli*	Foliar Spray
Crowsfoot grass	*Eleusine indica*	Foliar Spray
Red natal grass	*Melinis repens*	Foliar Spray
Winter grass	*Poa annua*	Foliar Spray
Slender pigeon grass	*Setaria parviflora*	Foliar Spray
Johnson Grass	*Sorghum halepense*	Foliar Spray
Signal grass	*Urochloa decumbens*	Foliar Spray
Winter grass	*Poa annua*	Foliar Spray
Vines:		
Scientific Name	**Common Name**	**Management approach**
Climbing asparagus fern	*Asparagus africanus* Cut	Cut Stump/Hand Pull/Foliar Spray
Lantana	*Lantana camara* Cut	Cut Stump/Foliar Spray
Creeping Lantana	*Lantana montevidensis*	Foliar Spray
Phasey bean	*Macroptilium lathyroides*	Foliar Spray
Glycine	*Neonotonia wightii*	Cut Stump/Hand Pull/Foliar Spray
Corky passion vine	*Passiflora suberosa*	Cut Stump/Hand Pull/Foliar Spray
White passionflower	*Passiflora subpeltata*	Cut Stump/Hand Pull/Foliar Spray
Stinking passionflower	*Passiflora foetida*	Cut Stump/Hand Pull/Foliar Spray
Brazilian nightshade	*Solanum seaforthianum*	Foliar Spray
Singapore daisy	*Sphagneticola trilobata*	*trilobata* Foliar Spray.
Shrubs and Herbaceous		
Scientific Name	**Common Name**	**Management approach**
Crofton weed	*Ageratina adenophora*	Foliar Spray
Mistflower	*Ageratina riparia*	Foliar Spray
Billygoat weed	*Ageratum conyzoides*	Foliar Spray
Blue billygoat weed	*Ageratum houstonianum*	Foliar Spray
Groundsel bush	*Baccharis halimifolia*	Cut Stump/Foliar Spray
Cobblers' pegs	*Bidens pilosa*	Foliar Spray
Mother-of-millions	*Bryophyllum delagoense*	Foliar Spray
Shepherds purse	*Capsella bursa-pastoris*	Foliar Spray
Larkdaisy	*Centratherum punctatum*	Foliar Spray
Asthma plant	*Chamaesyce hirta*	Foliar Spray
Flaxleaf fleabane	*Conyza bonariensis*	Foliar Spray
Canadian fleabane	*Conyza canadensis var. Pusilla*	Foliar Spray
Tall fleabane	*Conyza sumatrensis*	Foliar Spray
Thickhead	Crassocephalum crepidioides	Foliar Spray
Gomphrena weed	Gomphrena celosioides	Foliar Spray
Blue heliotrope	Heliotropium amplexicaule	Foliar Spray
Mock	Murraya paniculata	Cut Stump/Foliar Spray
Ochna	Ochna serrulata	Foliar Spray
Creeping oxalis	Oxalis corniculata	Foliar Spray
Velvet tree pear	Opuntia tomentosa	Frill/Basal Bark/Foliar Spray
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Giant devil's fig	Solanum chrysotrichum	Cut Stump/Foliar Spray
Blackberry nightshade	Solanum nigrum	Foliar Spray
Yellow bells	Tecoma stans	Frill/Basal Bark/Foliar Spray

Activity 6 – Vertebrate Pest Management Program

The 2022 pest animal management program conducted at the Greenbank Training Area consisted of three parts: 1. pre-control camera monitoring; 2. wild canine control; and 3. post-control camera monitoring. Species targeted included wild dogs (*Canis familiaris*), foxes (*Vulpes vulpes*) and feral cats (*Felis catus*). The pre-control monitoring was conducted over fourteen days (14) utilising twelve (12) remote surveillance trail cameras positioned on internal vehicle access tracks within the Greenbank Training Area. Two of these cameras were placed at the junction of Training Area 2 (TA2) and Training Area 3 (TA3) and at the junction of TA2 and the ring road. Fox and wild dog activity recorded during the monitoring period was low in comparison to the results obtained in 2019. A canid pest ejector (CPE - 1080) trial was conducted over fourteen (14) days. Six (6) CPEs (2 CPEs per site) were installed at three (3) locations identified as consistent fox activity. Two (2) of the six (6) CPEs were discharged during the two-week period. From photographic images obtained by the remote surveillance cameras, two foxes received the discharged 1080 poison.

At the conclusion of the canid pest ejector trial, a wild canine foothold trapping program was conducted over thirteen (13) consecutive nights. Trapping resulted in four foxes being captured and euthanised on-site in accordance with industry best practice and animal ethics legislation. All fox carcasses were donated to the UQ Gatton Campus for research purposes (i.e. parasite counts).

The post-control monitoring component was conducted over fourteen (14) days utilising twelve (12) remote surveillance cameras again positioned on internal vehicle access tracks within the Greenbank Training Area. Post control monitoring recorded three fox images, one wild dog and one cat.

The use of canid pest ejectors (CPEs) was trialled within the Greenbank Training Area in July 2022. Two (2) CPEs were installed at three locations (Table 4) that had been identified as having consistent wild dog and fox activity from previous years feral animal control programs and including anecdotal sightings of wild dogs and foxes. Two (2) of the six (6) CPEs were discharged during the two-week trial period. From the images obtained at each trial site, two (2) foxes received the discharged 1080 poison. Wild dogs, foxes and cats were not trapped within the offset area and only one (1) wild dog travelling through the area.

Activity 7 – Other Habitat Improvement measures

A Hazard reduction planned for part of TA2 in 2022 was completed as a cool burn in February 2023 (Fig 2.)

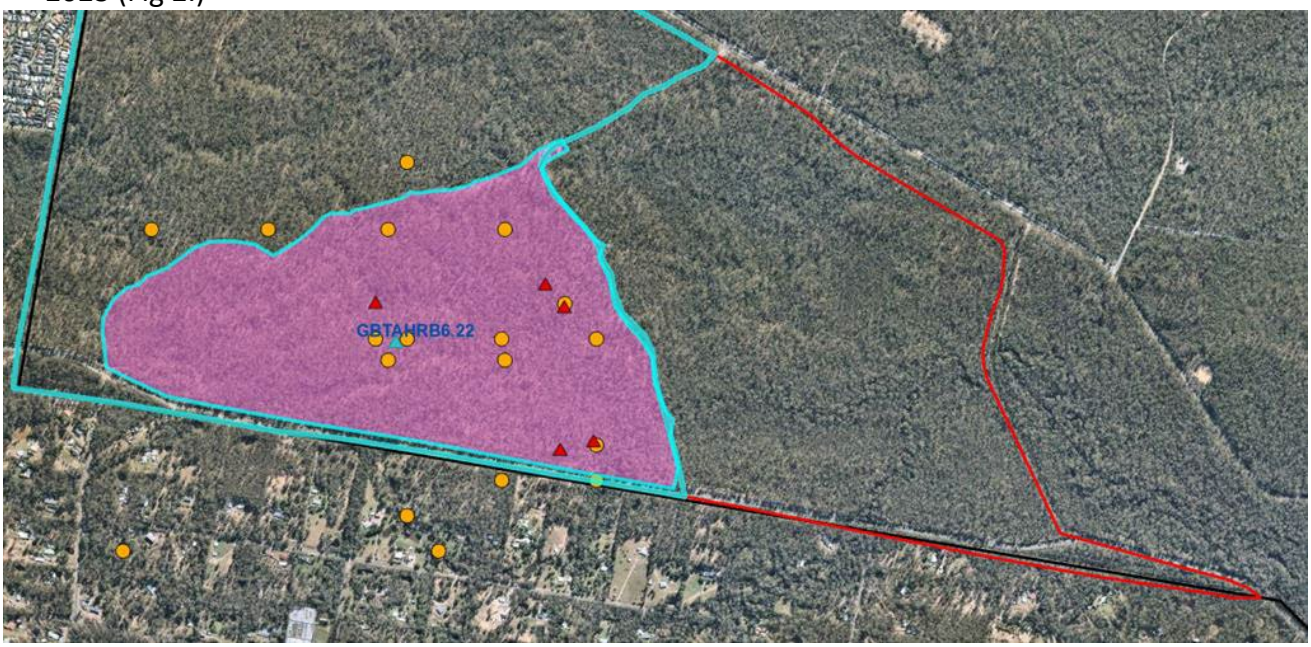

Figure 2. TA2 cool burn February 2023 showing NASA and NAFI hotspots from February 11.

Activity 8 - Fauna movement measures

Early results reported in 2020 period showed that some fence crossings are frequently used by native and pest fauna. 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 SE QLD. The conduct of research and monitoring is a focus of the updates offset strategy to be submitted in July 2023.