

Biodiversity Offset Area –

Land Management Action Plan 2024-25

Orica Mining Services – Kurri Kurri NSW – August 2024

This Land Management Action Plan was produced for Orica Mining Services in August 2024 to outline the management works undertaken during 2023-2024 period and planning the ongoing requirements for the Kurri Kurri Site Biodiversity Offset area for the period 2024-25.

SUBMITTED	DATE	REVISION
Ryan Bremmell	16/08/2024	Version 1
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Ryan Bremmell	24/09/2024	Final

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16/08/2024

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## **1. Introduction**

For the past 12 years Hunter Land Management (HLM) carried out weed and pest control at the Orica Biodiversity Offset Area (BOA) at Kurri Kurri NSW (see Figure 1). This includes both primary and secondary treatment of the targeted weeds as identified in the Biodiversity Offset Area Vegetation Management Plan (Umwelt 2012) and 1080 Wild Dog and Fox Baiting in 2018, 2019, 2020, 2021, 2022, 2023 and 2024. The creation of the 2013-14, 2014-15, 2016-2017, 2017-2018, 2018-2019, 2019-2020, 2020-2021, 2021-2022, 2022-2023 and 2023-2024 Land Management Action Plans (LMAP) is an evolution of this original plan of management. This LMAP identifies further issues which are not only impacting on the ability to control weeds at the site but broader land management issues which are impacting on the overall health of the BOA.

Hunter Land Management undertook the following methodology to develop this Land Management Action Plan in 2024-25 for Orica Mining Services Biodiversity Offset area at Kurri Kurri NSW to observe and record noxious and environmental weeds, erosion, waste, fence condition and any vertebrate pest signs in the area. Other land management issues affecting the health of the biodiversity area were also noted.

## **2. Land Management Actions 2023-24**

The main land management action which was undertaken on site during 2023/2024 period focused on weed control. A weed control campaign was undertaken in the high priority area during October 2023. Details of this program can be found below.

### **2.1. Weeds**

Weed control at the site has been effective over the 2012-2024 control period with a significant reduction in density and species present. Primary control has seen a major reduction in large volumes of major weeds on site with this year's focus moved to upstream and border areas. A majority of the previous weed infestation areas remains clean with it being close to weed free, as there were minimal weeds during the monitoring surveys in 2023 and 2024. The area declared as "low density" or weed free has continues to increase.

Weeds controlled during this recent control period are mapped below. Weed control was undertaken within the biodiversity area and simultaneously on the adjacent Orica Buffer Lands, both of which will have positive outcomes for biodiversity in the offset area.

### **2.2. Sambar Deer Control**

Open range shooting was undertaken within the Biodiversity Offset Area on 27<sup>th</sup> December 2023 and 2<sup>nd</sup> January 2024. No deer were sighted or controlled on either occasion despite approximately 6 hours total effort spent on site. Sambar deer are a highly elusive species which often require significant time to effectively target. It is recommended that further ground shooting efforts are made during the 2024-25 management period.



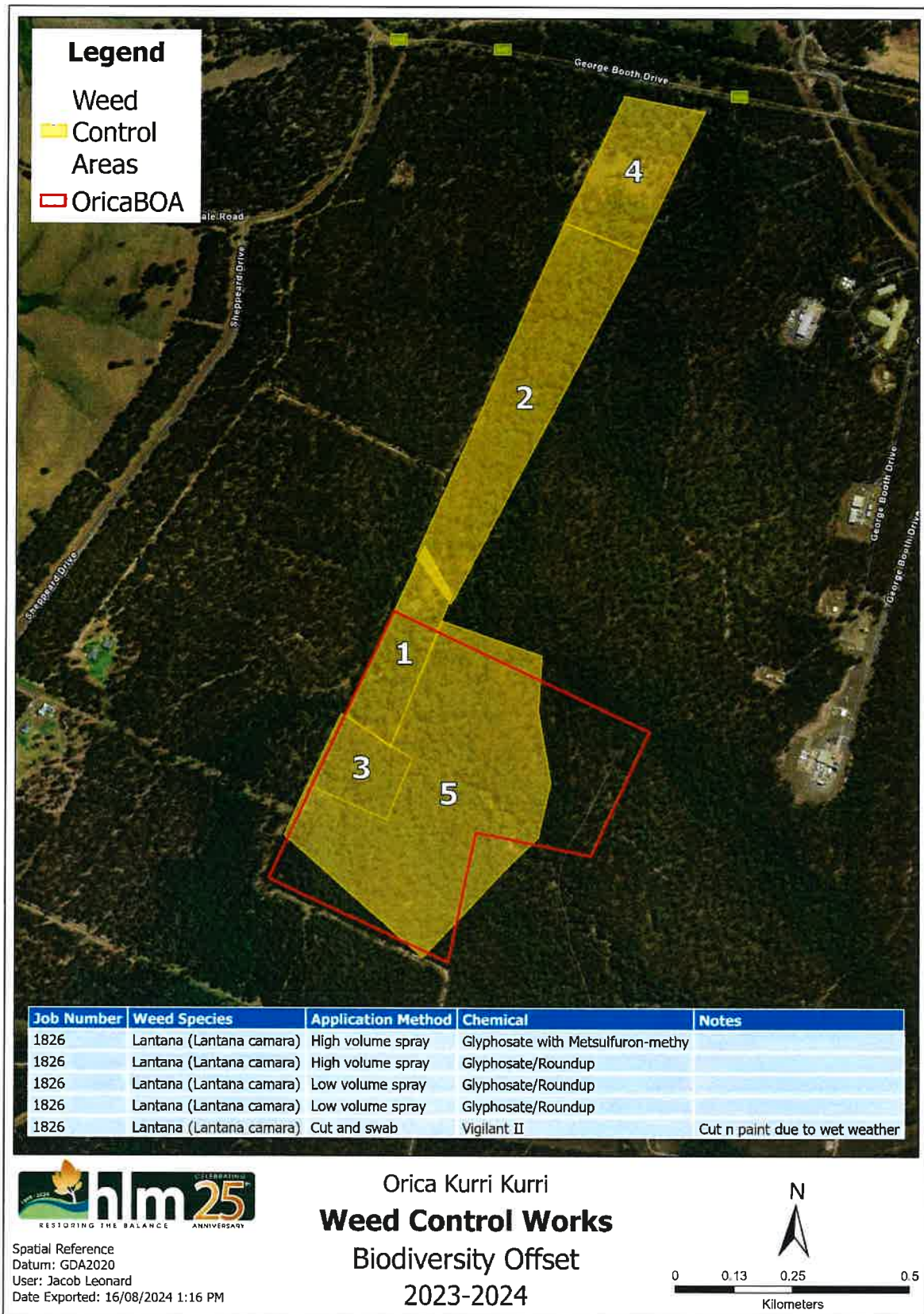


Figure 1: GIS Mapping of 2023-2024 Weed Control Locations

Orica Biodiversity Offset Area – LMAP 2024-2025

### 3. Land Management Actions 2024-25

This section provides actions to address the “Orica Richmond Vale Biodiversity Monitoring Report – 2023” Umwelt, September 2023. The more holistic approach will help to significantly increase the biodiversity value of the BOA. Table one provides the suggested schedule for action in accordance with this plan.

#### 3.1. Weeds

Weeds to be targeted in 2024-2025 include;

- Lantana (*Lantana camara*)
- Paddy’s Lucerne (*Sida rhombifolia*)
- Cobblers Pegs (*Bidens pilosa*)
- Flatweed (*Hypochaeris radicata*) and
- Fireweed (*Senecio madagascariensis*).

The control methods to be used for weed management in 2024-2025 should include:

##### Hand Removal Methods

*Digging out plants:* Plants with bulbs, tubers and corms must be completely removed from the soil by digging out. Often these plants will reproduce from broken off pieces.

*Crowning:* This technique is useful for weeds such as asparagus fern, which have their growing points below the surface of the soil. (Corms, rhizomes or tufted fibrous root systems).

*Hand pulling:* Hold the plant stem as close as possible to the base of the plant. Gently tug the plant. This will loosen the soil and allow the plant to come free. The plant may be hung up off the ground or piled in a heap.

*Winding up:* This process is suitable for plants with surface or climbing runners such as moth vine.

##### Herbicide Control Methods

*Foliar Spraying (High Volume Spray, Low pressure back pack type):* This method requires spot spraying foliage of plants using knock down or selective herbicides.

*Splatter Gun:* This involves using gas powered splatter guns to distribute high concentration herbicide onto plant foliage.

*Cut, Scrape and Paint (Cut Stump):* This is suitable for coppicing and suckering woody weeds such as Privet and Green Cestrum, or any weeds which are too large for hand-pulling or have long taproots. This method provides for no soil disturbance and weed eradication is successful. The cut surface is treated with a systemic herbicide immediately after cutting.

**ACTION - Continue weed control focusing on regrowth in previously controlled areas, border and upstream weed areas in Figure 1 using methods outlined above during the 2024-2025 period.**

### **3.2. Monitoring Cameras**

Continue to maintain 2 motion sensor cameras on the site along track access to monitor both illegal access and pest animal presence.

**ACTION – Continue to maintain 2 motion sensor cameras to be checked and downloaded every 3/6 months**

### **3.3. Vertebrate Pest Control**

A 1080 baiting program should be undertaken on site to reduce feral predators preying on native animals in 2024-25 as completed previously. Feral Deer Control (Ground Shooting) should also be undertaken due to recent incursion of Sambar Deer onto the site during the management period. Motion sensor cameras should also be used through the program.

**ACTION - Conduct a 1080 baiting program targeting foxes and feral dogs. Undertake ground shooting program targeting Sambar Deer**



**Figure 2: Sample photographs of Sambar Deer recorded on site during recent management period**

### **3.4. Track Improvement and Access Maintenance**

Use Earthmoving machinery to improve track access through the site for weed and pest management, firefighting and ongoing monitoring works. Machinery and gravel to be imported where required. An assessment of accessibility of the site inclusive of the biodiversity offset area and if required additional gates, fencing or rock barrier will be installed at access points.

**ACTION – Employ earthmoving machinery to repair and upgrade track access into BOA**



**Table 1: Schedule of works.**

	Timing				Budget Est.
	Oct – Dec 2024	Jan- Mar 2025	April -June 2025	Jul – Sep 2025	
Weed Control					\$8,000.00
Maintain Monitoring Cameras					\$1,500.00
Vertebrate Pest Control (1080 baiting and deer control)					\$2,500 (Baiting) \$3,000 (Deer Control)
Track Improvement and Access Maintenance					\$10,000.00
Monitor and evaluate – progress reports and 2025-26 management plan					\$3,750.00
<b>TOTAL (approx.)</b>					<b>\$28,750.00</b>

\*HLM Rates Subject to review each financial year.

\*\*Totals are estimates only and may vary slightly subject to factors such as amount of herbicide used etc.

#### **4. Monitoring and Evaluation**

Monitoring is a key component of this Management Plan. The main monitoring tool for this site will be the annual inspections conducted after 12 months in August 2025. This inspection forms the basis for ongoing weed monitoring at the site and assessment of effective control established throughout the 2024-25 management period. Weed control data will continue to be collected in the field using GPS technology, which provides the basis for mapping of control areas and planning for future works.

In addition to this all use of herbicide is managed in strict accordance with the label and conditions for spray such as wind, humidity and temperature. The 'Herbicide Application Record Sheet' (Appendix 1) is used to record all weather data throughout the day as well as the herbicide usage.

In addition to the annual monitoring inspections site monitoring will be conducted twice throughout the 12-month management period and a brief report provided outlining works completed, still to be done and any additional works which are not identified in the plan. This may include the control of new weeds, further waste, erosion and other issues which may or may not have been raised in this management plan.

## Appendix 1. Herbicide Application Record Sheet

All chemical applications will require the detailed filling of this record sheet.



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## DAILY REPORT SHEET

0001

Date:	Site: <input type="checkbox"/> Mine Site	Supervisor:	Project Manager:
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Job numbers	Times		Hours			
	Start Time	Finish Time	Normal Time	Time and a half	Double time	Total

Equipment/Plant used (tick if used)

Ute <input type="checkbox"/> Unit No:	Quikspray <input type="checkbox"/> Unit No:	Tractor <input type="checkbox"/> Make:	Mine radio: <input type="checkbox"/>	Other: (describe) <input type="checkbox"/>
Drivers/Operators:			Work Request Number	

Daily Breakdown

Time left depot:	Time arrived on site:	Crib break start/finish time:	Lunch break start/finish time:	Time left site:
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Chemical Use Record

Property/Holding: (residential address)

Applicator's Full Name:

Sensitive Areas (including distances, buffers):	Comments (including risk control measures for sensitive areas):									
<table border="1"> <tr><td> </td><td>N</td><td> </td></tr> <tr><td>W</td><td>Treated Area</td><td>E</td></tr> <tr><td> </td><td>S</td><td> </td></tr> </table>		N		W	Treated Area	E		S		
	N									
W	Treated Area	E								
	S									

Application Data

Full Label Product Name:	Rate/Dose:	Water Rate @ L/ha:		
Permit No.:	Expiry Date:	Additives/Wetters:		
Total L/kg:	Applicators initials:	Water quality (pH or description):		
Equipment type:	Nozzle Type:	Nozzle Angle:	Pressure:	Date Last Calibrated:
Weather    Showers <input type="checkbox"/> Overcast <input type="checkbox"/> Light Cloud <input type="checkbox"/> Clear sky <input type="checkbox"/>				

Rainfall (24 hours before and after)

Before:	mm	During:	mm	After:	mm
Time (show time in this column)	Temperature °C	Relative Humidity (%)	Wind Speed	Direction	Variability (e.g. gusting)
Start					
Finish					

Description of day's work completed/issues encountered:	Materials Used:
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HLM Staff Members Used

Name:	Sign:	O/N Allowance

Comment from / by Client

Client sign:	Client Name:
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Job Completed     Job Ongoing     Other Works



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