B&W Rural and GVIA

Mimosa Management Demonstration

The Mimosa Management Demonstration was initiated in 2015 with funding from the North West Local Land Services (NW LLS).

The trial aimed to demonstrate a range of management options for Mimosa (*Vachellia farnesiana*) which was declared by the NSW Governmment as an invasive or 'feral native species' in 2013.

It is an invasive pest which is difficult to effectively contol in northern NSW. The pest is causing significant problems on native grasslands, stock routes, grazing and cropping country.

The project includes two sites located on the Travelling Stock Routes adjacent to the Gwydir Highway approximately 10Km east of Moree.

Project Details

Treatments 5 to 8 were mulched in November 2015, with regrowth allowed to take place over the following 12 months. Chemical applications did not take place until November 2016.

The majority of the plots in the trial had heavy infestations of mimosa, with some bushes in excess of 2.5m tall. Access and even coverage was difficult, especially in treatments 9 to 12 where there was no slashing or mulching.

Additional information is available on the GVIA website:

https://www.gvia.org.au/community-and-industry-initiatives/mimosa-management/

Treatment Techniques

There were two basic treatment techniques;

1. Mechanical mulching (12 months prior) and Chemical (application to regrowth).

   This involved the mulching of the treatment area. Twelve months post mulching the chemicals were applied.
2. Chemical (spray application and pellets).

Chemical application involved the use of either quad bikes fitted with hand spray units or Quick spray units fitted to 4WD vehicles.

Dye was used to guide application, but heavy infestations made coverage difficult, especially in the treatments which were not mulched.

Treatment Details

Technique	Treatmt No.	Product	Volume	Application dates
Mechanical / Chemical (Mulched Nov 2015, chemical application to regrowth Nov 2016 to Jan 2017)	5	Lontrel Advanced 250 mL + Pulse Penetrant 100mL	100L	Site 1: 7Nov16 Site 2: 23Nov16 & 5Jan17
	6	Lontrel Advanced 150mL + Stinger 20 g + Pulse Penetrant 100 mL	100L	Site 1: 7Nov 16 Site 2: 4Jan17
	7	Starane Advanced 1.8L + Diesel 100L	100L	Site 1: 7Nov16 Site 2: 3 Jan 17
	8	Access 1L + Diesel 60L	60L	Site 1: 7Nov16 Site 2: 3Jan17
Chemical (Application Nov 2016 to Jan 2017)	9	Lontrel Advance 250mL + Pulse Penetrant 100mL	100L	Site 1: 7Nov16 Site 2: 23Nov16 & 5Jan17
	10	Lontrel Advance 150mL + Stinger 20g + Pulse Penetrant 100mL	100L	Site 1: 7Nov16 Site 2: 16Nov16 & 23Nov16
	11	Grazon Extra 500mL + Lontrel Advance 150mL + Stinger 20g + Pulse Penetrant 100mL	100L	Site 1: 7Nov16 Site 2: 17Nov16 & 4Jan17
Pellets (Applied Nov 2016)	12	Graslan 2g/m2		Site 1: 15Nov16

CORTEVA™ agriscience

Thank You to Corteva Agroscience (formally DowAgroSciences) for the donation of chemcal towards this project.

Rainfall

Very dry conditions prevailed throughout the project.

Rainfall 12 months mulch to spray	604.2
Annual Rainfall July16 - June17	593.4
Annual Rainfall July17 - June18	442
Annual Rainfall July18 - June19	300.2
Rainfall 32 months since application	1059

Assessments

The first and second assessments were visual brown-out ratings on 40 plants in each plot.

- No plants were given a 100 percent rating in these first two assessments.
- Ratings below 95 percent had some green leaves still present on the plants and some green colour to some of the stems.
- Ratings of 95 percent was for plants where there were no green leaves, but still some green on some of the stems.

Aerial Image Site 1
17th July 2017

The final assessment also used a visual rating. Included was an assessment of the percent of plants that had a 100% rating at the final assessment.

- 100 percent rating was allocated to plants with no sign of any green, and no potential for regrowth.

During the final assessment new seedlings were evident having shot from seeds under plants. In many cases these plants were assessed as 100 percent controlled by the chemical application.

Native Vegetation Guidelines:

Vachellia farnesiana is considered an invasive native species in the north west of NSW. Information on the current legislation for Invasive Native Species is available at:

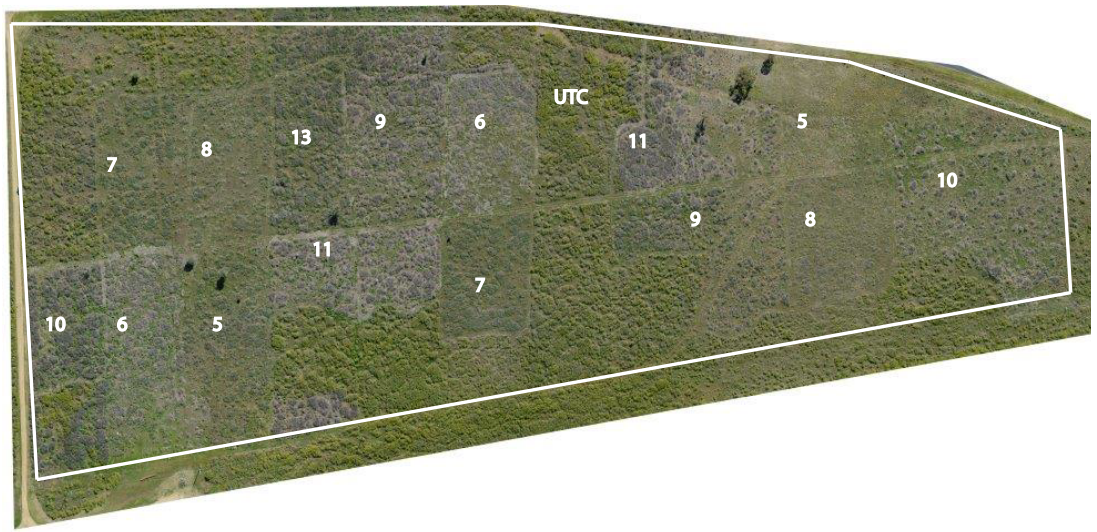
https://www.lls.nsw.gov.au/sustainable-land-management/facts-sheets2/land-management-code-invasive-native-species

Additional information on invasive native species or the native vegetation reforms, is available from the Local Land Services on 1300 778 080, email slm.info@lls.nsw.gov.au,

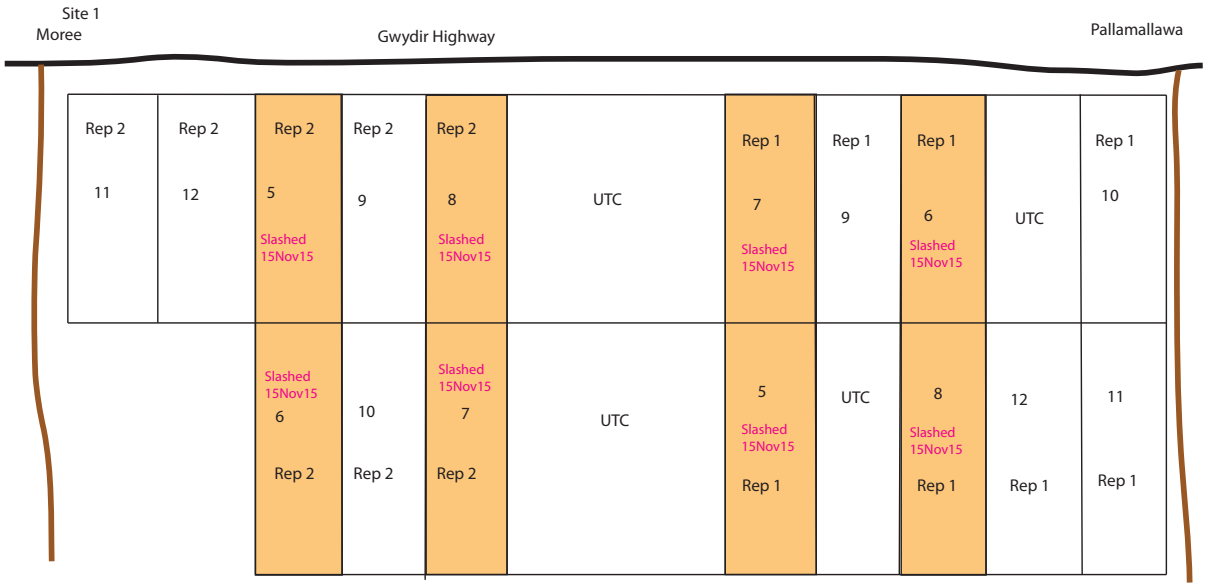
The NSW Government website is also a valuable link

https://www.landmanagement.nsw.gov.au/land-management-and-regulatory-maps/

Aerial Image Site 2
17th July 2017



Site 1 (Western)



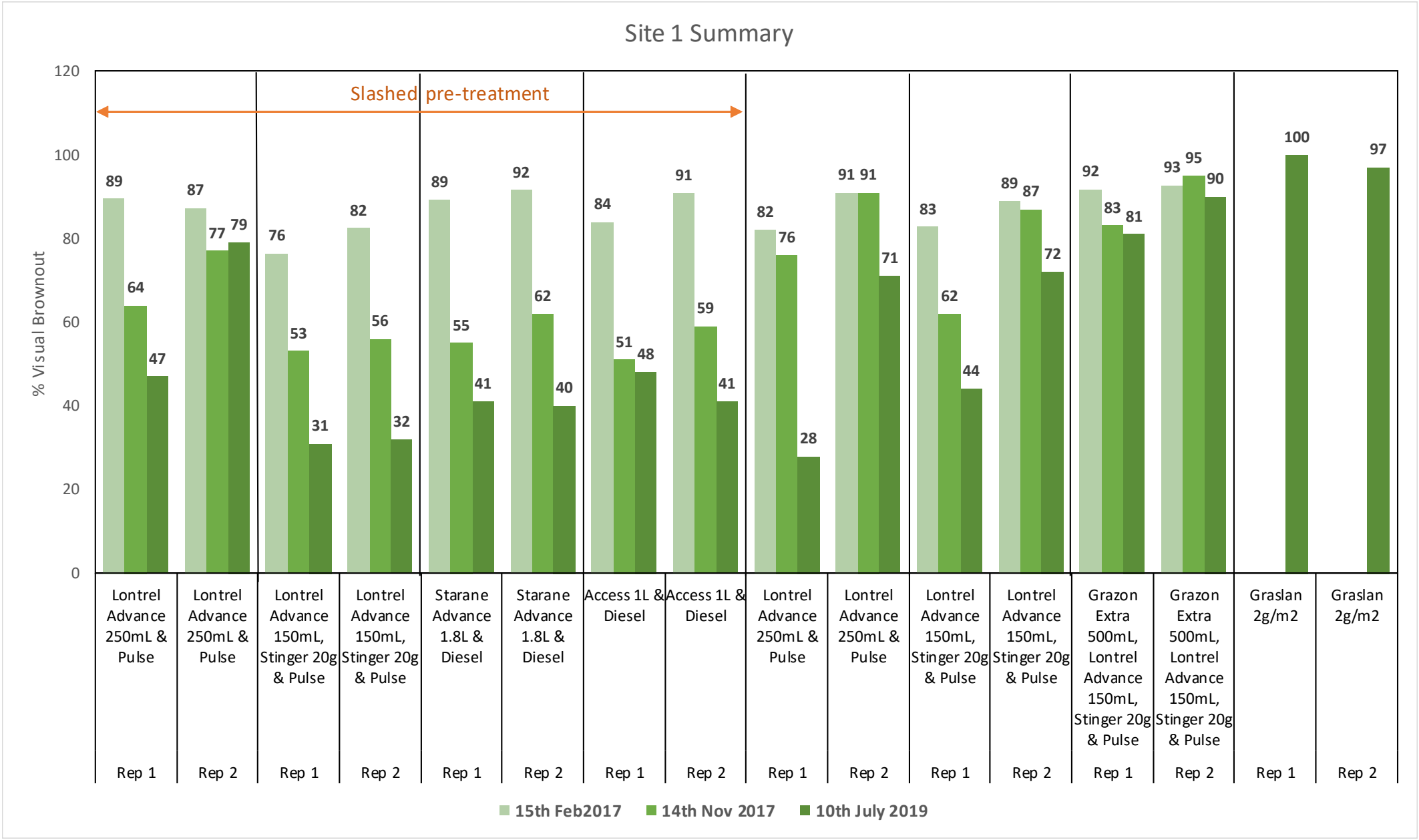
Application:
7th to 11th November 2016
Mechanical/Chemical
(Mulch & regrowth Spray)

5	Lontrel Advanced	250 mL + Pulse Penetrant	100 mL
6	Lontrel Advanced	150 mL + Stinger	20 g + Pulse Penetrant 100mL
7	Starane Advanced	1.8L + Diesel	100L
8	Access 1L	60L + Diesel	60L

Chemical

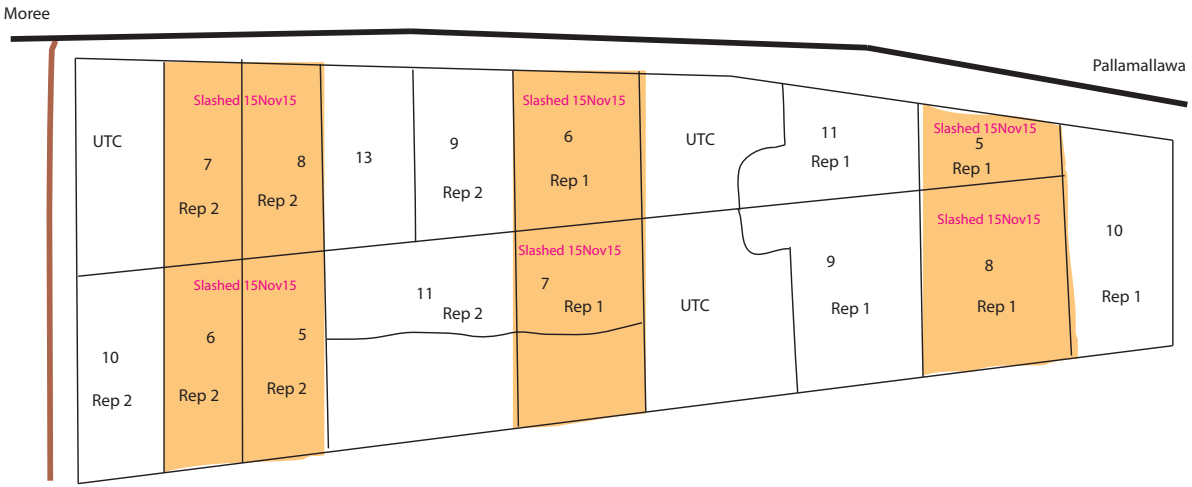
9	Lontrel Advanced	250 mL + Pulse Penetrant	100mL
10	Lontrel Advanced	150 mL + Stinger 20 g + Pulse Penetrant	100 mL
11	Grazon Extra	500 mL + Lontrel Advanced	150 mL + Stinger 20 g + Pulse Penetrant 100 mL
12	Graslan	2 g/m2	

Pre - Treatment	Treatment	Rep	Chemical	15th Feb2017	14th Nov 2017	10th July 2019
Slash / regrowth	5	Rep 1	Lontrel Advance 250mL & Pulse	89	64	47
		Rep 2		87	77	79
Slash / regrowth	6	Rep 1	Lontrel Advance 150mL, Stinger 20g & Pulse	76	53	31
		Rep 2		82	56	32
Slash / regrowth	7	Rep 1	Starane Advance 1.8L & Diesel	89	55	41
		Rep 2		92	62	40
Slash / regrowth	8	Rep 1	Access 1L & Diesel	84	51	48
		Rep 2		91	59	41
Nil	9	Rep 1	Lontrel Advance 250mL & Pulse	82	76	28
		Rep 2		91	91	71
Nil	10	Rep 1	Lontrel Advance 150mL, Stinger 20g & Pulse	83	62	44
		Rep 2		89	87	72
Nil	11	Rep 1	Grazon Extra 500mL, Lontrel Advance 150mL, Stinger 20g & Pulse	92	83	81
		Rep 2		93	95	90
Nil	12	Rep 1	Graslan 2g/m2			100
		Rep 2				97


Site 1 Summary
% Visual Brownout
120
100
80
60
40
20
0
Slashed pre-treatment
89
64
47
87
77
79
76
53
31
82
56
32
89
55
41
92
62
40
84
51
48
91
59
41
82
76
28
91
91
71
83
62
44
89
87
72
92
83
81
93
95
90
100
97
Lontrel Advance 250mL & Pulse
Rep 1
Lontrel Advance 250mL & Pulse
Rep 2
Lontrel Advance 150mL, Stinger 20g & Pulse
Rep 1
Lontrel Advance 150mL, Stinger 20g & Pulse
Rep 2
Starane Advance 1.8L & Diesel
Rep 1
Starane Advance 1.8L & Diesel
Rep 2
Access 1L & Diesel
Rep 1
Access 1L & Diesel
Rep 2
Lontrel Advance 250mL & Pulse
Rep 1
Lontrel Advance 250mL & Pulse
Rep 2
Lontrel Advance 150mL, Stinger 20g & Pulse
Rep 1
Lontrel Advance 150mL, Stinger 20g & Pulse
Rep 2
Grazon Extra 500mL, Lontrel Advance 150mL, Stinger 20g & Pulse
Rep 1
Grazon Extra 500mL, Lontrel Advance 150mL, Stinger 20g & Pulse
Rep 2
Graslan 2g/m2
Rep 1
Graslan 2g/m2
Rep 2
15th Feb2017
14th Nov 2017
10th July 2019

Site 2 (Eastern)

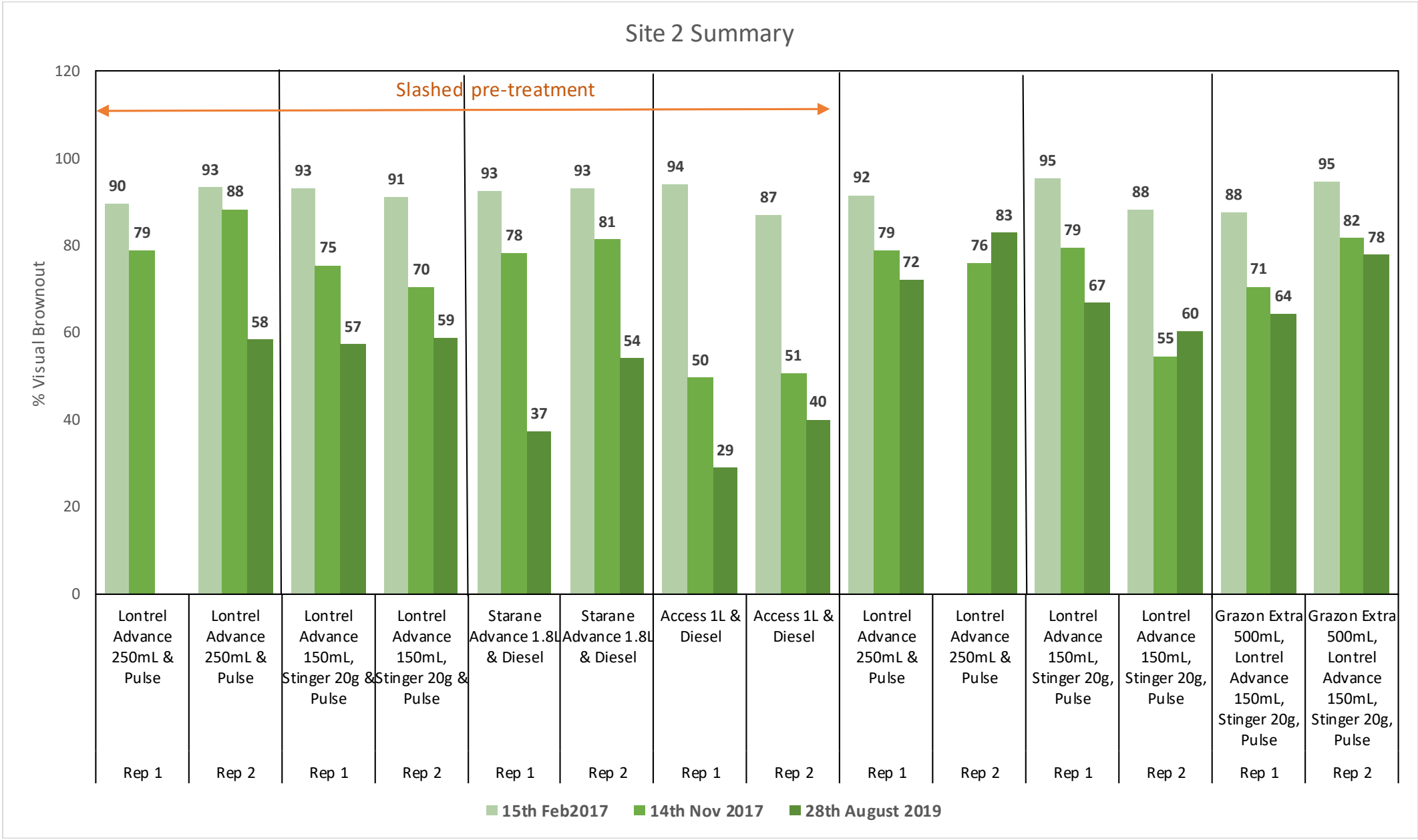
Site 2

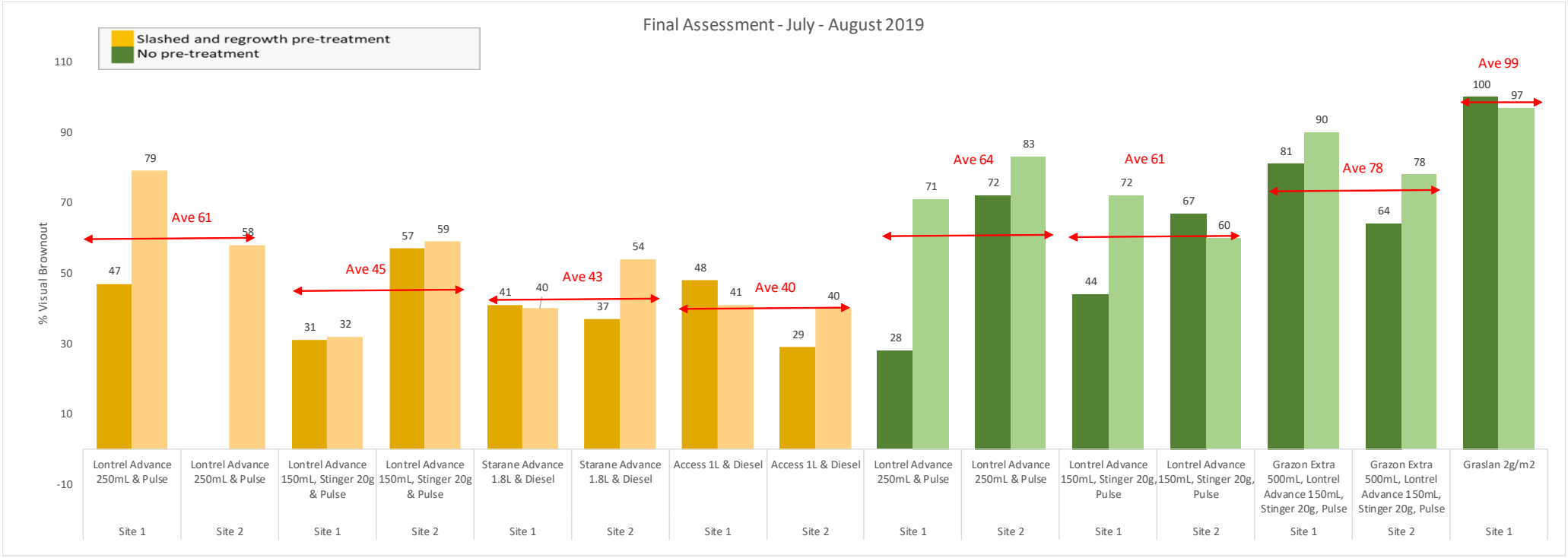


Application:
16th November 2016 to 5th January 2017
Mechanical/Chemical

(Mulch & regrowth Spray)	5	Lontrel Advanced	250 mL + Pulse Penetrant 100 mL
	6	Lontrel Advanced	150 mL + Stinger 20 g + Pulse Penetrant 100mL
	7	Starane Advanced	1.8L + Diesel 100L
	8	Access 1L	60L + Diesel 60L
Chemical	9	Lontrel Advanced	250 mL + Pulse Penetrant 100mL
	10	Lontrel Advanced	150 mL + Stinger 20 g + Pulse Penetrant 100 mL
	11	Grazon Extra 500 mL + Lontrel Advanced 150 mL + Stinger 20 g + Pulse Penetrant 100 mL	
	13	Lontrel Advance 250mL + Stinger 20g + Pulse Penetrant	

Pre - Treatment	Treatment	Rep	Chemical	15th Feb2017	14th Nov 2017	28th August 2019
Slash / regrowth	5	Rep 1	Lontrel Advance 250mL & Pulse	90	79	
		Rep 2		93	88	58
Slash / regrowth	6	Rep 1	Lontrel Advance 150mL, Stinger 20g & Pulse	93	75	57
		Rep 2		91	70	59
Slash / regrowth	7	Rep 1	Starane Advance 1.8L & Diesel	93	78	37
		Rep 2		93	81	54
Slash / regrowth	8	Rep 1	Access 1L & Diesel	94	50	29
		Rep 2		87	51	40
Nil	9	Rep 1	Lontrel Advance 250mL & Pulse	92	79	72
		Rep 2			76	83
Nil	10	Rep 1	Lontrel Advance 150mL, Stinger 20g & Pulse	95	79	67
		Rep 2		88	55	60
Nil	11	Rep 1	Grazon Extra 500mL, Lontrel Advance 150mL, Stinger 20g, Pulse	88	71	64
		Rep 2		95	82	78


Site 2 Summary
% Visual Brownout
120
100
80
60
40
20
0
Slashed pre-treatment
90
79
93
88
58
93
75
57
91
70
59
93
78
37
93
81
54
94
50
29
87
51
40
92
79
72
76
83
95
79
67
88
55
60
88
71
64
95
82
78
Lontrel Advance 250mL & Pulse
Rep 1
Lontrel Advance 250mL & Pulse
Rep 2
Lontrel Advance 150mL, Stinger 20g & Pulse
Rep 1
Lontrel Advance 150mL, Stinger 20g & Pulse
Rep 2
Starane Advance 1.8L & Diesel
Rep 1
Starane Advance 1.8L & Diesel
Rep 2
Access 1L & Diesel
Rep 1
Access 1L & Diesel
Rep 2
Lontrel Advance 250mL & Pulse
Rep 1
Lontrel Advance 250mL & Pulse
Rep 2
Lontrel Advance 150mL, Stinger 20g, Pulse
Rep 1
Lontrel Advance 150mL, Stinger 20g, Pulse
Rep 2
Grazon Extra 500mL, Lontrel Advance 150mL, Stinger 20g, Pulse
Rep 1
Grazon Extra 500mL, Lontrel Advance 150mL, Stinger 20g, Pulse
Rep 2
15th Feb2017
14th Nov 2017
28th August 2019



Results and Conclusions

Many plants had leaf growth some was green, but the majority was desicated and easily dislodged. This is believed to be a result of frost or the continuing dry conditions, the six months from January to August 2019 there was only 83mm of rainfall. The stems on these plants remained green and were deamed to have the potential for regrowth.

Although most treatments showed promising performance in the initial assessments, over the longer term treatments 11 (Grazon Extra 500mL + Lontrel Advance 150mL + Stinger 20g + Pulse Penetrant 100mL) and 12 (Graslan) provided the best results.

Variability in results between the two sites and reps is most possibly due to difficulty associated with application. Some plants were 2.5m tall making coverage very difficult.

The results in the mulched treatments were generally poorer than in the unmulched treatments. This may be due to the small leaf area for chemical penetration compared to the root area of the plants.

Given that new plants were evident, even in treatments where control was above 95% a second treatment may be required to give the most consistent control of this difficult pest.

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