

Natural Temperate Grassland and Pink-Tailed Worm Lizard Restoration Works

Scrape and Sow Monitoring

18th October 2021



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1. Executive Summary

This report provides an analysis of native and exotic species growth on the Scrape and Sow site, undertaken to restore Natural Temperate Grasslands and Pink-tailed Worm Lizard habitat in the Ginninderry Conservation Corridor. The study also identified a control plot externally to the Scrape and Sow which will be monitored to determine the previous species that dominated the Scrape and Sow and to identify whether the native seeds are spreading from the Scrape and Sow into the surrounding paddocks.

Three surveying methods were undertaken, including:

- Transects along the 5 jute strips and open space between jute in the Scrape and Sow;
- Braun-Blanquet scores on randomly located circular plots in the Scrape and Sow and;
- A 20m x 20m plot outside the Scrape and Sow with the top 5 species identified.

The transect results demonstrate that the open space has reduced from April 2021 monitoring and that the jute hasn't significantly impacted the growth of the sown plants, with the transects in open space and on jute having similar totals of native plants. The transects along the open spaces indicated a higher number of exotic recruitment, which requires further monitoring and weeding. There also appears to be a reduction in the overall exotics along the jute lines, which could be a result of management activities or a reduced amount of space for exotic seeds to set.

The circular plot surveys have identified several native species that were not sown, many of which are abundant. As at October 2021, Plot 2 demonstrated an increase in sown species establishment with a success rate of 75%. Plot 3 demonstrated a 58% success rate of sown species establishment.

2. Scope

Annual monitoring by Friends of Grassland & the Trust will be undertaken in Autumn and Spring to ensure the sown native grasses and forbs are growing and the abundance of the plants on the site.

3. Monitoring Methods

Transects were set up to monitor surface character (e.g., bare ground, native grass, etc) throughout the scrape. In addition, circular plots were marked for detailed surveying of all plant species growing.

Transects: The site has 6 jute strips. Transects were placed (a) along the top of the 5 jute strips close to the top of the site and (b) in the open space between these jute strips. Transects were placed with start and end roughly 1 metre in from both sides of the site and 35 metres long for the upper 3 transects and 30 metres long for 2 of the transects where the scrape narrows at its

lower end. This method was used to help determine whether the placement of jute enhanced grassland establishment (in addition to reducing run-off).

A tape measure was laid along each transect. At each metre a stiff wire was placed on the ground and plants that touched the wire were counted and recorded. If the wire probe hit jute at ground level this was recorded and then counted a second time for nearest other space beside the jute. In the transects between jute strips, if rock/brick was hit, a second count was taken either at the right or left edge of each, whichever was closest. Distinction was drawn between hits at ground level and hits on the wire probe at any point above ground (i.e. suspended). Finally, vegetation heights (excluding seed heads) were to be estimated for jute and open space transects.

Braun-Blanquet Scores: Plot centre coordinates were randomly generated for centres of 11.3 metre circular plots each 400 sq metres in area. No changes were made to the plot locations during the November 2021 Plots were monitored at the following:

Plot 1: 15.4, 15.0 (note: this plot was not surveyed in Nov 2020, April and Oct 2021)

Plot 2: 25.6, 36.7

Plot 3: 14.9, 57.4

*Note that these centre coordinates are in metres with distance from the SE corner (beside gate) across slope first, distance down slope second. In subsequent monitoring sessions, it will be decided whether to retain these 3 centres, or to re-randomise.

All plant species identified were recorded separately including numbers of each counted in each plot. Using this, each species was assigned a BB cover/abundance score shown below. A list of species sown as seed was provided. For weights of seeds sown listed by species, see the 3rd column in appendices 3 and 5.

BB cover/abundance scores	
BB Score Category	Score
1	< 5 % cover and solitary (<4 individuals)
2	< 5 % cover and few (4-15 individuals)
3	< 5 % cover and numerous (>15 individuals)
4	5 % - <25 % cover
5	25 % - <50 % cover
6	50 % - <75 % cover
7	75 or greater % cover

External Control Plot: A 20m x 20m plot was measured out side the Scrape and Sow site and the 5 most abundant species were identified.

4. Results

4.1. Results from October 2021 Monitoring

Open space: Along the transect lines in the open spaces there was 129 counts of bare ground (including sand/loam) and 5 counts of rock, 5 counts of landing directly on native grasses, 1 count of a native forb and 11 counts on perennial introduced grasses/ forbs at ground level. The suspended-plant-matter counting identified 105 counts on native grass, 15 counts of native forbs and 27 counts of fine litter (unattached and easily dispersed by rainfall). Exotics were also identified in the suspended-plant-matter including; 24 annual grasses and forbs and 41 perennial introduced grasses. Across ground and suspended-plant-matter counts there was total of 126 native plant hits. Across ground and suspended-plant-matter counts there was a total of 76 introduced plant hits.

Jute: Along the transect lines on the jute there was 129 counts of bare ground, 9 counts of touching the jute fabric, 8 counts of landing directly on native grasses, 2 counts of native forbs, 1 count of landing on annual exotic and 13 counts on perennial introduced grasses/ forbs at ground level. The suspended-plant-matter count identified 105 hits on native grass (besides *Themeda*) and 16 on native forbs. Across ground and suspended-plant-matter counts there was a total of 131 native plant hits. The counting also identified 43 hits on perennial introduced grasses and forbs, 30 hits on annual exotics and 18 hits on fine litter (unattached, easily dispersed by rainfall). Across ground and suspended-plant-matter counts there was total of 87 introduced plant hits.

Braun-Blanquet Scores: Circular plots, 2 and 3 highlighted that there was good growth for many of the sown species and also several native species that weren't sown.

In Plot 2, of the 24 species sown, 6 were not present at the time of monitoring. The survey identified 7 native species that were not sown. Overall, 25 individual native species were found including 18 sown and 7 not sown. The survey also identified 26 exotic species, with 17 of the species scoring a BB score of 3. See appendix 4 & 5 for full results.

In Plot 3, of the 24 species sown, 10 were not present at the time of monitoring. The survey identified 9 native species that were not sown. Overall, 23 individual native species were found including 14 sown and 9 not sown. The survey also identified 24 exotic species, with St John's Wort (*Hypericum perforatum*) having the greatest abundance. See appendix 6 & 7 for full results.

External Control Plot:

An external plot was added to the monitoring schedule in an area adjacent to the scrape and sow site to track baseline conditions. The plot measured 20m x 20m and the 5 most abundant species were recorded. The survey identified *Trifolium subterraneum* and *Avena barbata* to be equally the most abundant in the plot. *Carex inversa* was the only native identified to be abundant in the plot.

Discussion

Transects:

The transects have identified that there has been a 10.5% increase in growth along the jute strips and 16% increase in growth along the open spaces from April 2021. The transect results demonstrate that the jute hasn't significantly biased the growth of the sown plants, with the transects on and off the jute having similar totals of native plant hits. Interestingly there has been a reasonable decrease of exotic species along the open spaces compared to April 2021 and a slight increase of exotics along the jute strips. This reduction of exotics along the open spaces is mostly likely a result of weed management activities and an increase in native recruitment. The native species continue to outnumber the exotic species across open space and jute transects.

Circular Plots:

Plot 2 is demonstrating an increase in native species with 14 individual native species having a BB score of 3 and 2 with a BB score of 4. 4 new sown species were also identified in plot 2. The two species which are demonstrating the best growth are two *Rytidosperma* species. Overall, the exotics still outnumber the natives in plot 2, with 17 of the 26 species identified having a BB score of 3. Two species that were identified to be dominate in plot 2 during November 2020, *Conzya sp.* and *Hypericum perforatum*, have decreased from a BB score of 4 to 3. This is most likely a result of weed management activities and needs to be continuously managed. 9 of the 12 native species that were not sown and identified in November 2020, were not found during monitoring in October 2021. This could be a result of the sown native species becoming more prevalent.

Plot 3 is demonstrating an increase in native species with 14 individual species having a BB score of 3 and 1 with a BB score of 4. In November 2020 there was only 9 species with a BB score of 3. *Rytidosperma sp.* is the most prevalent species identified in plot 3. 3 of the 8 native species not sown and identified in November 2020, were not found during October 2021 surveys. Interesting there has been a significant decrease in the exotic species, with 13 individual exotic species having a BB score of 3 and 1 with a score of 4. In November 2020, 20 individual exotic species had a BB score of 3.

External Control Plot:

The external plot demonstrated a highly exotic pasture, which was not unexpected. 4 out of 5 of the abundant species identified were exotic. Further monitoring and weed management needs to undertaken to prevent the exotic species from taking over the Scrape and Sow site.

4.2. Results from April 2021 Monitoring

Open space: Along the transect lines in the open spaces there was 152 counts of bare ground (including sand/loam) and 2 counts of rock, 6 counts of landing directly on native grasses and 4 counts on perennial introduced grasses/ forbs at ground level. The suspended-plant-matter counting identified 104 counts on native grass (though no *Themeda* was found), 13 counts of native forbs and 1 count of fine litter (unattached and easily dispersed by rainfall). Across ground and suspended-plant-matter counts there was total of 123 native plant hits. The counting also identified 100 perennial introduced grasses and forbs. Across ground and suspended-plant-matter counts there was total of 104 introduced plant hits.

Jute: Along the transect lines on the jute there was 144 counts of bare ground, 14 counts of touching the jute fabric, 4 counts of landing directly on native grasses and 10 counts on perennial introduced grasses/ forbs at ground level. The suspended-plant-matter count identified 120 hits on native grass (besides *Themeda*) and 10 on native forbs. Across ground and suspended-plant-matter counts there was a total of 134 native plant hits. The counting also identified 65 hits on perennial introduced grasses and forbs and 3 hits on fine litter (unattached, easily dispersed by rainfall). Across ground and suspended-plant-matter counts there was total of 75 introduced plant hits.

Discussion

The transects have identified that there hasn't been any significant changes to the site since November 2020. Interestingly the monitoring identified that there was a higher number of introduced grasses and forbs found along the open space transects. This could be a result of having less interference by the jute for exotic seeds to set in the bare spaces. The native species currently outnumber the exotic species across open space and jute transects. This has increased from the November monitoring which had a higher number of exotics.

4.3. Results from November 2020 Monitoring

Open space: Along the transect lines in the open spaces there was 160 counts of bare ground (including sand/loam) and 1 count of rock. The suspended-plant-matter counting identified 34 hits on native grass (though no *Themeda* was found) and 6 counts of native forbs. Along the 5 interval spaces i.e., open space there were 40 native plants hit. The counting also showed 32 annual introduced grasses and forbs and 37 perennial introduced grasses and forbs with a total count of 69 exotic plants.

Jute: Along the transect lines on the jute there was 168 counts of bare ground, 38 counts of touching the jute fabric and 1 count of landing directly on an annual introduced grass at ground level. The suspended-plant-matter count identified 27 hits on native grass (besides *Themeda*) and 7 on native forbs making a total of 34 native plants hit. The counting also identified 22 hits on annual introduced grasses and forbs and 36 on perennial introduced grasses and forbs with a total count of 58 exotic plants.

Braun-Blanquet Scores: The circular plots 2 and 3 highlighted that there was good growth for many of the sown species and also several native species that weren't sown.

In Plot 2, of the 24 species sown, 10 have yet to sprout. The survey identified 12 native species that were not sown. Overall, 26 individual native species were found including 14 sown and 12 not sown. The survey also identified 30 exotic species, with Fleabane (*Conyza sp.*) having the greatest abundance. See appendix 1 & 2 for full results.

In Plot 3, of the 24 species sown, only 7 have yet to sprout. The survey identified 8 native species that were not sown. Overall, 25 individual native species were found including 17 sown and 8 not sown. The survey also identified 35 exotic species, with St John's Wort (*Hypericum perforatum*) having the greatest abundance.

Discussion

The transects have identified that there was still a large amount of bare ground on 12 Nov 2020, which is to be expected as many plants growing were quite small. The transect results demonstrate that the jute hasn't significantly biased the growth of the sown plants, with the transects on and off the jute having similar totals of native plants. The circular plot survey has identified several native species that were not sown, many of which are abundant. There are several possibilities as to why this has occurred. Seed may have inadvertently come from the seed mix, been retained in the bare scrape or blown/drained into the site. The exotic species currently outnumber the native species in both the transects and circular plots. With regular weed control being undertaken, the native species should outnumber the exotics in later monitoring. In future monitoring events we will establish a reference plot in an area adjacent to the scrape to track baseline conditions.

5. Appendix

Appendix 1: Transect results – Oct 2021

BETWEEN JUTE STRIPS/ OPEN SPACES ON GROUND	Raw data Oct 2021	Recalculated to 100 observations
Mosses, lichens	0	0.0
Bare ground (incl loose sand/ loam) or algae	113	81.3
Rock or tile	4	2.9
Fine litter	11	7.9
Jute fabric in scrape	0	0.0
Logs, sticks, bark	0	0.0
Themeda	0	0.0
Native grasses not Themeda	4	2.9
Other native species (forbs, ferns, sedges, lilies, orchids etc)	1	0.7
Annual introduced grasses and forbs	0	0.0
Perennial introduced grasses, forbs	10	7.2
SUSPENDED		
Fine litter	24	17.3
Logs, sticks, bark	0	0.0
Themeda	0	0.0
Native grasses not Themeda	92	66.2
Other native species (forbs, ferns, sedges, lilies, orchids etc)	15	10.8
Annual introduced grasses and forbs	21	15.1
Perennial introduced grasses, forbs	36	25.9
Number of observations	139	100
ON JUTE STRIPS ON GROUND	Raw data Oct 2021	Recalculated to 100 observations
Mosses, lichens	0	0.0
Bare ground (incl loose sand/ loam) or algae	113	82.5
Rock or tile	0	0.0
Fine litter	3	2.2
Jute fabric in scrape	8	5.8
Logs, sticks, bark	0	0.0
Themeda	0	0.0
Native grasses not Themeda	7	5.1
Other native species (forbs, ferns, sedges, lilies, orchids etc)	2	1.5
Annual introduced grasses and forbs	1	0.7
Perennial introduced grasses, forbs	11	8.0
SUSPENDED		
Fine litter	18	13.1
Logs, sticks, bark	1	0.7
Themeda	1	0.7
Native grasses not Themeda	92	67.2
Other native species (forbs, ferns, sedges, lilies, orchids etc)	14	10.2
Annual introduced grasses and forbs	26	19.0
Perennial introduced grasses, forbs	38	27.7
Number of observations	137	100

Appendix 2: External Control Plot results – October 2021

SCRAPE & SOW MONITORING EXTERNAL CONTROL PLOT DATE: 18.10.2021 MONITORED BY: SH, MN, KH, RE, AK, TP, BN		
5 most abundant species <i>1 being most abundant</i>	SPECIES	Comments
1	<i>Trifolium subterraneum</i>	Equal first
2	<i>Avena barbata</i>	Equal first
3	<i>Carex inversa</i>	
4	<i>Hypericum perforatum</i>	
5	<i>Bromus diandrus</i>	

Appendix 3: Combined ON and OFF jute results across all years – transect data

The on and off jute data have been combined because survey results between and on jute strips are quite similar. The combined data demonstrates the decrease in bare ground and increase of both native/ exotic plant cover over the course of 3 monitoring periods.

*Note, in April 2021 transects, due to difficulty with distinction between annual and perennial introduced grasses (and forbs), that all non-native grasses were grouped in the perennial category.

ON GROUND	November 2020 Average of OFF & ON jute	April 2021 Average of OFF & ON jute	October 2021 Average of OFF & ON jute
Bare ground (incl loose sand/ loam) or algae	99.5	92.5	82
Fine litter	0	0	5
Jute Fabric in scrape	11	4.5	3
Logs, sticks, bark	0	0	0
Themeda	0	0	0
Native grasses not Themeda	0	3	4
Other native species (forbs, ferns, sedges, lilies, orchids etc)	0	0	1
Annual introduced grasses and forbs	0.5	*	0.5
Perennial introduced grasses, forbs	0	4.5	7.5
SUSPENDED			
Fine litter	0	1	15
Logs, sticks, bark	0	0	0.5
Themeda	0	0	0.5
Native grasses not Themeda	19	70	66.5
Other native species (forbs, ferns, sedges, lilies, orchids etc)	4	7	10.5
Annual introduced grasses and forbs	17	*	17
Perennial introduced grasses, forbs	22	51.5	27

The combined values have been normalised to total 100 observations on ground for each observing date. Values have also been rounded to the nearest 0.5

Appendix 4: Braun Blanquet Scores Plot 2 – Native Species Oct 2021

NATIVE SPECIES		
DATE: 18/10/2021 MONITORED BY: SH, MN, KH, RE, AK		
PLOT NUMBER: 2 PLOT CENTRE COORDS: 25.6, 36.7		
NATIVES	Count	BB score
<i>Acaena ovina</i> (not sown) *		
<i>Anthosachne scaber</i> (not sown) *	>15	3
<i>Austrostipa bigeniculata</i>	1	1
<i>Austrostipa densiflora</i>	>15	3
<i>Austrostipa scabra</i>	>15	3
<i>Bothriochloa macra</i>	>15	3
<i>Bulbine bulbosa</i>		
<i>Calotis lappulacea</i>	6	2
<i>Carex inversa</i> (not sown) *		
<i>Chloris truncata</i>		
<i>Chrysocephalum apiculatum</i>	3	1
<i>Chrysocephalum semipapposum</i>	>15	3
<i>Convolvulus erubescens</i>		
<i>Cymbonotus lawsonianus</i> (not sown) *		
<i>Einadia nutans</i> (not sown) *		
<i>Eryngium ovinum</i>	4	1
<i>Euchiton sp.</i> (not sown) *		
<i>Glycine tabacina</i>		
<i>Hakelia suaveolens</i> (not sown) *		
<i>Helichrysum spp.</i> (not sown) *	1	1
<i>Juncus bufonius</i> (not sown) *		
<i>Leucochrysum albicans</i>	>15	3
<i>Linum marginale</i>	>15	3
<i>Lythrum hysopifolium</i> (not sown) *		
<i>Microlaena stipoides</i>	>15	3
<i>Oxalis sp.</i> (not sown) *		
<i>Plantago varia</i>	6	2
<i>Pseudognaphalium luteoalbum</i> (not sown) *	1	1
<i>Rhodanthe anthemoides</i>	>15	3
<i>Rumex brownii</i> (assumed, not sown) *	4 to 15	2
<i>Rytidosperma</i> #1	>15	4
<i>Rytidosperma caespitosa</i>		
<i>Rytidosperma sp.</i> #2 (hairy)	>15	4
<i>Themeda triandra</i>	4 to 15	2
<i>Vittadinia cuneata</i>		
<i>Vittadinia gracilis</i>	>15	3
<i>Vittadinia muelleri</i>	>15	3
<i>Wahlenbergia communis</i>	>15	3
<i>Wahlenbergia spp.</i> (small flower)	>15	3
<i>Xerochrysum viscosum</i> (not sown) *	>15	3



Appendix 5: Braun-Blanquet Scores Plot 2 – Exotic species Oct 2021

EXOTIC SPECIES		
DATE: 18/10/2021 MONITORED BY: SH, MN, KH, RE, AK		
PLOT NUMBER: 2 PLOT CENTRE COORDS: 25.6, 36.7		
EXOTICS	Count	BB Score
<i>Aira sp.</i>		
<i>Anthoxanthum odoratum</i>	1	1
<i>Avena sp</i>	>15	3
<i>Briza maxima</i>	>15	3
<i>Bromus diandrus</i>	1	1
<i>Bromus hordeaceus</i>		
<i>Carthamus lanatus</i>	>15	3
<i>Cerastium glomeratum</i>		
<i>Chondrilla juncea</i>	>15	3
<i>Cirsium vulgare</i>	4	2
<i>Conyza sp.</i>	7	2
<i>Echium plantagineum</i>		
<i>Echium vulgare</i>	>15	3
<i>Festuca arundinacea</i>	>15	3
<i>Gamochaeta sp.</i>		
<i>Hirschfeldia incana</i>	>15	3
<i>Holcus lanatus</i>	4 to 15	2
<i>Hypericum perforatum</i>	>15	3
<i>Hypochaeris glabra</i>	>15	3
<i>Hypochaeris radicata</i>	4 to 15	3
<i>Lepidium africanum</i>		
<i>Lolium sp.</i>		
<i>Malvus sp.</i>		
<i>Medicago #2</i>		
<i>Medicago arabica</i>		
<i>Modiola caroliniana</i>	>15	3
<i>Plantago lanceolata</i>	>15	3
<i>Polygonum aviculare</i>		
<i>Rubus anglocandicans</i>		
<i>Rumex acetosella</i>	>15	3
<i>Rumex crispus</i>		
<i>Salvia verbenica</i>		
<i>Sanguisorba minor</i>	1	1
<i>Silybum marianum</i>		
<i>Sonchus sp.</i>		
<i>Trifolium angustifolium</i>		
<i>Trifolium arvense</i>	>15	3
<i>Trifolium campestre</i>	1	1
<i>Trifolium dubium</i>	>15	3
<i>Trifolium glomeratum</i>		
<i>Trifolium striatum</i>		
<i>Trifolium repens</i>	2	1
<i>Trifolium subterraneum</i>	>15	3
<i>Verbascum thapsus</i>	1	1
<i>Verbascum virgatum</i>		
<i>Vulpia sp</i>	>15	3

Appendix 6: Braun Blanquet Scores Plot 3 – Native Species Oct 2021

NATIVE SPECIES		
DATE: 18/10/2021 MONITORED BY: SH, MN, KH, RE, AK		
PLOT NUMBER: 3 PLOT CENTRE COORDS: 14.9, 57.4		
NATIVES	Count	BB score
<i>Acaena ovina</i> (not sown) *		
<i>Anthosachne scaber</i> (not sown) *	>15	3
<i>Austrostipa bigeniculata</i>		
<i>Austrostipa densiflora</i>	>15	3
<i>Austrostipa scabra</i>	>15	3
<i>Bothriochloa macra</i>	>15	3
<i>Bulbine bulbosa</i>		
<i>Calotis lappulacea</i>	>15	3
<i>Carex inversa</i> (not sown) *		
<i>Cassinia longifolia</i>	1	1
<i>Chloris truncata</i>		
<i>Chrysocephalum apiculatum</i>		
<i>Chrysocephalum semipapposum</i>	>15	3
<i>Convolvulus erubescens</i>		
<i>Cymbonotus lawsonianus</i> (not sown) *		
<i>Einadia nutans</i> (not sown) *		
<i>Eryngium ovinum</i>	1	1
<i>Euchiton</i> sp. (not sown) *		
<i>Glycine tabacina</i>		
<i>Hakelia suaveolens</i> (not sown) *		
<i>Juncus bufonius</i> (not sown) *		
<i>Leucochrysum albicans</i>	>15	3
<i>Linum marginale</i>	>15	3
<i>Lythrum hysopifolium</i> (not sown) *	2	1
<i>Microlaena stipoides</i>	>15	3
<i>Oxalis</i> sp. (not sown) *	6	2
<i>Plantago varia</i>	4	2
<i>Pseudognaphalium luteoalbum</i> (not sown)*	3	1
<i>Rhodanthe anthemoides</i>	>15	3
<i>Rumex brownii</i> (assumed, not sown) *	1	1
<i>Rytidosperma</i> #1 (Not hairy)	>15	4
<i>Rytidosperma caespitosa</i>		
<i>Rytidosperma</i> sp. #2 (hairy)	>15	3
<i>Themeda triandra</i>		
<i>Vittadinia cuneata</i>		
<i>Vittadinia gracilis</i>	>15	3
<i>Vittadinia muelleri</i>	>15	3
<i>Wahlenbergia communis</i>	>15	3
<i>Wahlenbergia</i> spp.		
<i>Xerochrysum viscosum</i> (not sown) *	6	2

Appendix 7: Braun-Blanquet Scores Plot 3 – Exotic species Oct 2021

EXOTIC SPECIES		
DATE: 18/10/2021 MONITORED BY: SH, MN, KH, RE, AK		
PLOT NUMBER: 3 PLOT CENTRE COORDS: 14.9, 57.4		
EXOTICS	Count	BB Score
<i>Aira sp.</i>		
<i>Anthoxanthum odoratum</i>		
<i>Avena sp</i>	>15	3
<i>Briza maxima</i>	3	1
<i>Bromus diandrus</i>		
<i>Bromus hordeaceus</i>	4	1
<i>Carthamus lanatus</i>	>15	3
<i>Cerastium glomeratum</i>		
<i>Chondrilla juncea</i>	>15	3
<i>Cirsium vulgare</i>	7	2
<i>Conyza sp.</i>	2	1
<i>Echium plantagineum</i>		
<i>Echium vulgare</i>	>15	3
<i>Festuca arundinacea</i>	4	1
<i>Gamochaeta sp.</i>		
<i>Hirschfeldia incana</i>	>15	3
<i>Holcus lanatus</i>	>15	3
<i>Hypericum perforatum</i>	>15	4
<i>Hypochaeris glabra</i>	3	1
<i>Hypochaeris radicata</i>	7	2
<i>Lepidium africanum</i>		
<i>Lolium sp.</i>		
<i>Malvus sp.</i>		
<i>Medicago #2</i>		
<i>Medicago arabica</i>		
<i>Modiola caroliniana</i>	>15	3
<i>Plantago lanceolata</i>	>15	3
<i>Polygonum aviculare</i>		
<i>Rubus anglocandicans</i>		
<i>Rumex acetosella</i>	>15	3
<i>Rumex crispus</i>		
<i>Salvia verbenica</i>		
<i>Silybum marianum</i>		
<i>Sonchus sp.</i>		
<i>Trifolium angustifolium</i>		
<i>Trifolium arvense</i>	>15	3
<i>Trifolium campestre</i>		
<i>Trifolium dubium</i>	>15	3
<i>Trifolium glomeratum</i>	2	1
<i>Trifolium repens</i>	1	1
<i>Trifolium striatum</i>		
<i>Trifolium subterraneum</i>	>15	3
<i>Verbascum thapsus</i>	2	1
<i>Verbascum virgatum</i>		
<i>Vulpia sp</i>	>15	3

Appendix 8: Monitoring pictures of the Scrape and Sow – October 2021



Figure 1: Top left corner of site and first open space



Figure 2: First jute band - 6m down from top left corner



Figure 3: Open space second from top



Figure 4: Jute band - 26.5m down from top



Figure 5: Open space third from the top



Figure 6: Jute band - 43m from the top



Figure 7: Open space fourth from the top



Figure 8: Jute band - 54.5m from the top



Figure 9: Open space fifth from the top



Figure 10: Jute band - 64.5m from the top

Appendix 9: Transect results – Open Space – April 2021

A. Ground: tally the group that is touching the ground

B. Suspended: tally for each group that is touching the wire above the ground. If there are two species within one group, score only one.

If multiple groups touch the wire, record each one (i.e., this recognises that there is overlapping cover).

	Ground	Suspended
Mosses, lichens		
Bare ground (incl loose sand/loam) or algae	152	
Rock or tile	2	
Fine litter (unattached, easily dispersed by rainfall)		1
Jute fabric in scrape		
Logs, sticks, bark (not easily dispersed by rainfall)		
Themeda		
Native grasses besides Themeda	6	104
Other native species (forbs, ferns, sedges, lilies, orchids etc)		13
Annual introduced grass and forbs		
Perennial introduced grasses, forbs	4	100
Vegetation height (excluding seed stems)		
Litter depth (cm)		

Appendix 10: Transect results – Jute cover band – April 2021

A. Ground: tally the group that is touching the ground

B. Suspended: tally for each group that is touching the wire above the ground. If there are two species within one group, score only one. If multiple groups touch the wire, record each one (i.e., this recognises that there is overlapping cover).

	Ground	Suspended
Mosses, lichens		
Bare ground (incl loose sand/loam) or algae	144	
Rock or tile		
Fine litter (unattached, easily dispersed by rainfall)		3
Jute fabric in scrape	14	
Logs, sticks, bark (not easily dispersed by rainfall)		
Themeda		
Native grasses besides Themeda	4	120
Other native species (forbs, ferns, sedges, lilies, orchids etc)		10
Annual introduced grass and forbs		
Perennial introduced grasses, forbs	10	65
Vegetation height (excluding seed stems)		
Litter depth (cm)		

Appendix 11: Monitoring pictures of the Scrape and Sow – April 2021



Figure 1: Top right corner of the site



Figure 2: Straight down the middle from top of site



Figure 3: Top left corner of site and first open space



Figure 4: First jute band - 6m down from top left corner



Figure 5: Open space second from top



Figure 6: Jute band - 26.5m down from top



Figure 7: Open space third from the top



Figure 8: Jute band - 43m from the top



Figure 9: Open space fourth from the top



Figure 10: Jute band - 54.5m from the top



Figure 11: Jute band - 64.5m from the top