17 November 2026

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Reassessment and mapping of the extent and condition of Natural Temperate Grassland of the South Eastern Highlands and Pink-tailed Worm-lizard habitat in the ACT portion of Ginninderry Conservation Corridor

Capital Ecology project no. 3466

Dear Angela,

This letter-report provides the results of Capital Ecology's autumn 2026 reassessment and mapping of the extent and condition of the Natural Temperate Grassland of the South Eastern Highlands (NTG-SEH) and the Pink-tailed Worm-lizard *Aprasia parapulchella* (PTWL) habitat in the ACT portion of the Ginninderry Conservation Corridor (GCC), Ginninderry, ACT (the 'study area', 376.17 ha, refer Figure 1).

1. Background

During autumn 2020, Capital Ecology completed detailed assessment and mapping of the NTG-SEH in the study area, with the mapping presented in Capital Ecology (2020[1]). The extent and condition of the PTWL habitat in the study area was assessed and mapped by Osborne and Wong (2013[2]), with portions reassessed by Capital Ecology (2018[3]) and found to closely conform to the Osborne and Wong (2013) mapping. The mapping prepared via these studies has since been used to inform the assessments and/or land management requirements applicable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and ACT *Nature*

[1] Capital Ecology (2020). *The Extent and Condition of Natural Temperate Grassland of the South Eastern Highlands in the Ginninderry Project Area*. Final 02 – July 2020. Prepared for The Riverview Group Pty Ltd. Authors: S. Reid, S. Thompson, and R. Speirs. Project no. 2916.
[2] Osborne and David Wong (2013). *The extent of habitat for the vulnerable Pink-tailed Worm Lizard (Aprasia parapulchella) in the West Belconnen – Ginninderra Creek investigation area - confirmatory distribution surveys and mapping.* Institute for Applied Ecology University of Canberra. 10 May 2013.
[3] Capital Ecology (2018). *Ginninderry - Pink-tailed Worm-lizard survey and habitat mapping*. 29 May 2018. Prepared for Riverview Projects (ACT) Pty Ltd. Authors: R. Speirs and S. Reid. Project no. 2772.

Conservation Act 2014. This includes the Ginninderry Conservation Corridor Ecological Monitoring Framework (Umwelt 2021[4]), which provides the key monitoring framework applied by the Ginninderry Conservation Trust (GCT) to monitor achievement of its commitments under the EPBC Act approval and thereby demonstrate compliance with the conditions thereof.

In accordance with the monitoring requirements set out in s.1.4.1 of Umwelt (2021), the GCT is required to monitor for changes in the extent and condition of the NTG-SEH and PTWL habitat in the study area. The timing for this monitoring is stated as "in the next 5 years" for the NTG-SEH and as "periodic" for the PTWL habitat. Accordingly, given that the extent and condition of the NTG-SEH in the study area was last assessed and mapped in March 2020 (Capital Ecology 2020), a monitoring event was due in 2025 and was therefore planned to occur during spring 2025. However, due to the unusually dry conditions across spring 2025, it was deemed necessary to delay the monitoring event with the aim of timing it to occur later in the applicable survey/mapping season following substantial summer-autumn rainfall. Fortunately, substantial rainfall was received in late summer and early autumn 2026 and this provided very similar temperate grassland growing conditions to those which occurred in late summer and autumn 2020 following the 2019 drought. This allowed Capital Ecology to capture the best available seasonal conditions of the 2025/26 survey season, with these being closely comparable to those of the 2020 monitoring event.

2. Methods

2.1 Task 1. Grassland Re-assessment and Mapping – Vegetation Zone Mapping

Task 1 involved repeating 'Step 2 – Vegetation Zone definition and mapping' of Capital Ecology's four-step method for grassland mapping (developed by Capital Ecology and first employed to map ACT grassland offset reserves in 2017 [Capital Ecology 2017[5]]), this being the method which we applied for the 2020 assessment and mapping (refer to Capital Ecology 2020 for the full method). Task 1 was undertaken on 5, 6 and 12 March 2026 by Robert Speirs, Capital Ecology's Principal Ecologist who undertook the 2020 assessment and mapping. Clear, sunny days were selected for the assessment and mapping, such conditions being necessary for the assessor to be able to clearly distinguish grassland vegetation composition and condition (e.g. on sunny autumn days Kangaroo Grass *Themeda triandra* is clearly distinguishable from African Lovegrass *Eragostis curvula*, this being crucial to the accuracy of the assessment). As described for Step 2, the current vegetation zone boundaries (i.e. the extent and condition of the grassland vegetation) were defined in the field and mapped directly onto high resolution field maps with the most recent appropriately timed (i.e. late summer – early autumn) aerial imagery, this being the March 2025 ACT Government aerial imagery.

Whilst it was not available for the field assessment or preliminary NTG-SEH mapping issued in April 2026, for the preparation of this report Capital Ecology completed an additional GIS-based review of the mapping overlain on the ACT Government aerial imagery flown on 5 March 2026. This review allowed us to make minor adjustments to the mapping to more accurately map any changes observed on the ground but not in the March 2025 imagery, noting that these were mainly limited to the areas along the urban development interface.

There was no need to repeat 'Step 1 – Plant Community Type (PCT) mapping' again as the positions of PCT boundaries are static (at least over the timescale of relevance for this ecological monitoring program).

[4] Umwelt (2021). *Ginninderry Conservation Corridor Ecological Monitoring Framework*. Final – April 2021.
[5] Capital Ecology (2017). *ACT Environmental Offsets – 2016 Grassland Mapping Report*. Prepared for ACT Government Parks and Conservation Service.

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Ginninderry Conservation Trust ecologists repeated 'Step 3 – Data collection (survey quadrats and transects)' as detailed in Capital Ecology (2020), with the findings of that monitoring (Ginninderry Conservation Trust 2026[6]) provided to Capital Ecology for inclusion herein (noted in Section 3 and a copy attached as Appendix A).

'Step 4 – Threatened Ecological Community (TEC) determination' was also repeated by Capital Ecology based on the results of Step 2.

2.2 Task 2. Pink-tailed Worm-lizard Habitat Re-assessment and Mapping

Informed in part by the results of Task 1, Task 2 involved on-ground assessment and mapping of the current extent and condition of the PTWL habitat in the study area. Occurring first in conjunction with Task 1 (i.e. where the focus was on the NTG-SEH portions of the study area) and then extending throughout the remainder of the study area, Task 2 involved inspecting each previously mapped patch of PTWL habitat within the study area to assess and map the following.

1. The current habitat quality using the classification/categorisation used by Osborne and Wong (2013) (detailed under 'Habitat Classification' in that report). Using the same habitat classification/categorisation ensured that any differences in the mapping are due to on-ground habitat change or mapping corrections, rather than differences in classification etc.

2. The current extent of the patch, defined and mapped in the field directly onto high resolution field maps with the most recent appropriately timed (i.e. late summer – early autumn) aerial imagery. Assisted by current high resolution aerial imagery, at numerous locations the boundaries of the patches were adjusted to more accurately reflect the on-ground extent of the patch.

In addition to the above, several small patches of suitable PTWL habitat not mapped by Osborne and Wong (2013) were identified, classified, and mapped. Based on our current knowledge that unformed vehicle tracks do not pose a barrier to PTWL movement where they run through the species' habitat, the few thin (i.e. approx. <10 m) sections cut from the previous mapping along the unformed vehicle tracks in the northern parts of the study area were replaced in the habitat layer.

3. Results

3.1 Task 1. Grassland Re-assessment and Mapping – Vegetation Zone Mapping

Figure 2 displays the extent of the grassland PCT (ACT-PCT01) in the study area, with this divided into its constituent vegetation zones as assessed and mapped in March 2026.

It is important to note that the area of the grassland PCT (ACT-PCT01) occurring in the study area (the ACT portion of the GCC) is 111.63 ha, this being less than the 131.35 ha occurring across the entire Ginninderry project area (i.e. including the portion located over the NSW border and the portion located in the Ginninderry development area) as was assessed and mapped for Capital Ecology (2020) (shown as the 'Estimated maximum 1750 extent of Natural Grasslands' in Figure 2).

Based on the reassessed grassland PCT (ACT-PCT01) vegetation zones, Figure 3 displays the extent of the portions of the study area which currently meet the EPBC Act listing criteria for NTG-SEH. Table 1 provides the areas of the March 2026 vegetation zones, and thereby the areas which meet the EPBC Act listing criteria for NTG-SEH. Table 1 also provides comparisons (i.e. change in hectares and percentage) between the March 2020 and March 2026 mapping.

[6] Ginninderry Conservation Trust (2026). *Natural Temperate Grassland – Floristic Monitoring 2026*.

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Table 1. ACT PCT01 2026 assessment and mapping results and comparison with 2020 results (ACT portion of GCC only)

ACT01 Zone	EPBC Act NTG-SEH	2020 area (ha)	2026 area (ha)	Change	
				Area (ha)	%
ACT01 - Zone 1 - Native Dominant - High Forb Diversity	Yes	13.65	10.72	-2.93	-21.47
ACT01 - Zone 2 - Native Dominant - Moderate Forb Diversity	Yes	27.78	26.30	-1.49	-5.35
EPBC Act NTG-SEH (zone 1 and 2)	**Yes**	**41.43**	**37.01**	**-4.42**	**-10.66**
ACT01 - Zone 3 - Native Dominant - Low Forb Diversity	No	41.52	39.96	-1.56	-3.77
ACT01 - Zone 4A - Exotic = Pasture and Agricultural Weed Species	No	24.27	21.96	-2.31	-9.50
ACT01 - Zone 4B - Exotic = Stock Camp	No	0.88	0.81	-0.07	-8.42
ACT01 - Zone 4C - Exotic = Noxious Weed Species (ALG)	No	3.54	11.73	+8.19	+231.34
Urban/Cleared	-	0.00	0.13	0.13	N/A

As detailed in Table 1, all native dominant grassland vegetation zones (Zones 1–3) have decreased in extent between 2020 and 2026. The greatest proportional decrease has occurred in Zone 1 with a reduction of -21.47%, with most of this transitioning to African Lovegrass dominated vegetation (Zone 4C), particularly in the southern portions of the study area. Most of the -5.35% decline in Zone 2 has also resulted from those areas transitioning to African Lovegrass dominated vegetation (Zone 4C), however the reduction in Zone 2 is not entirely reflected in this number because some smaller areas that were mapped as Zone 3 are now mapped as Zone 2 due to mapping refinements.

Importantly, as detailed (in bold text) in Table 1 and displayed in Figure 4, the combined/total reduction in NTG-SEH is -4.42 ha, which is -10.66% of the combined/total area of NTG-SEH mapped in 2020.

Zone 4A has decreased substantially (-9.50%) with most of this transitioning to Zone 4C (African Lovegrass), which has greatly expanded within the study area (+231.34%). This represents a transition from common exotic pasture and agricultural weed species to dominance by African Lovegrass.

As detailed in Table 3 of Ginninderry Conservation Trust (2026) (Appendix A herewith), the 2026 floristic value score (FVS) plots recorded a lower FVS for Zone 1 but higher FVSs for Zones 2, 3, and 4. Interestingly, based on these FVSs, one of the plots located in Zone 2 and one of the plots in Zone 3 met the FVS for Zone 1 (High to Very High condition NTG-SEH) and two of the plots in Zone 3 met the FVS for Zone 2. These results provide encouraging quantitative evidence of maintenance, and in some occurrences improvement, in the floristic diversity within Zones 2 and 3.

The 2026 transect data, provided in Table 5 and Appendix 4 of Ginninderry Conservation Trust (2026), shows a decrease in native species cover in Zones 1 and 2 but an increase in Zones 3 and 4. Appendix 4 shows that the decrease in native species cover aligns with the increase in perennial exotic grass cover at two transects in Zone 1 and two transects in Zone 2, with this presumed to be due to the increase cover of African Lovegrass as noted by the author for the FVS for Zone 1.

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3.2 Task 2. Pink-tailed Worm-lizard Habitat Re-assessment and Mapping

Figure 5 displays the extent of the areas classified and mapped in March 2026 as either 'suitable quality' or 'low quality' habitat for the PTWL, with the Osborne and Wong (2013) 'suitable quality' and 'low quality' habitat mapping displayed as a line hatch overlay. Table 2 details the areas for the habitat classifications as assessed and mapped in March 2026 and provides comparisons (i.e. change in hectares and percentage) between the 2013 and March 2026 mapping.

Table 2. Pink-tailed Worm-lizard 2026 habitat assessment results and comparison with 2013 results

PTWL Habitat Classification	Area (ha) - Osborne & Wong 2013 with Capital Ecology 2018-19 minor edits	Area (ha) - Capital Ecology 2026	Change	
			Area (ha)	%
Low Quality Habitat ACT GCC	4.68	13.59	+8.91	+190.38
Suitable Quality Habitat ACT GCC	**126.25**	**121.91**	**-4.34**	**-3.44**
Combined	130.93	135.50	+4.57	+3.49

As detailed in Table 2, there has been a net decrease of -4.34 ha (-3.44%) in the area of 'suitable quality' habitat between 2013 and 2026, with most (~98%) of this area transitioning to 'low quality' habitat, with this owing primarily to the subject areas transitioning to dominance of African Lovegrass. However, it is important to recognise that this net decrease does not entirely capture the extent of the transition of 'suitable quality' habitat to 'low quality' habitat resulting from African Lovegrass proliferation. As shown in Figure 5 and noted in Section 2.2, the 2026 assessment:

1. identified several small patches of 'suitable quality' habitat not mapped by Osborne and Wong (2013), which were classified and added to the mapping;

2. a few of the small habitat polygons mapped as 'low quality' habitat in 2013 were reclassified as 'suitable habitat', in most cases reflecting the dominance of Kangaroo Grass and other C4 summer growing grasses in the patches, which elevated their suitability as PTWL habitat; and

3. based on our current knowledge that unformed vehicle tracks do not pose a barrier to PTWL movement where they run through the species' habitat, the few thin (i.e. approx. <10 m) sections cut from the 2013 mapping along the unformed vehicle tracks in the northern parts of the study area were replaced in the habitat layer as 'suitable habitat'.

With regard to the above, it is noted that portions of the 2013 mapped 'suitable quality' habitat have also been reclassified in 2026 as 'low quality' due to the dominance of common exotic pasture and agricultural weed species, and this in part counteracts the increase in the 2026 mapped 'suitable quality' habitat resulting from points 1 to 3 above. It is our view that these areas were likely always more appropriately classified as 'low quality' (i.e. it is unlikely that they have changed to now have a dominance of common exotic pasture and agricultural weed species), and so the reclassification to 'low quality' is unlikely to reflect an actual decrease in the habitat quality in these areas.

In light of the above, as detailed in Table 3 and shown in Figure 6, a better measure by which to determine the actual decrease in the PTWL habitat quality in the study area, and certainly the most important measure from a management perspective, is the area of 2013 mapped 'suitable habitat' that has transitioned to 2026 mapped 'low quality' habitat due to the proliferation of African Lovegrass (being 4.30 ha or 5.42%, as bolded in Table 3). As is evident by comparing Figure 2 and Figure 6, this 4.30 ha area is primarily composed of the patches of PCT ACT01 in the central portion

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of the study area which have transitioned from Zone 1 and Zone 2 to Zone 4C due to African Lovegrass proliferation.

Table 3. 2013 mapped Suitable PTWL Habitat in ACT PCT01 area (grassland PCT) which is 2026 mapped Low PTWL Habitat – Reason for change

Reason for Change	Change Area (ha)	Percentage of 2013 mapped suitable habitat area (126.25 ha)
Pasture and agricultural weed species	4.76	6.01
Stock camp	0.24	0.30
Noxious weed species (ALG)	**4.30**	**5.42**
Urban/Cleared	0.06	0.08
Total	9.36	11.82

4. Discussion

The proliferation of African Lovegrass, and the ecosystem degradation resulting therefrom, is arguably the foremost threat to the temperate natural grassland and grassy woodland ecological communities of the ACT and surrounding regions of NSW. The degradation of remaining patches and their eventual loss, based on depletion of the key defining characteristics necessary to meet stated listing criteria, is almost universally identified as a key threat across Commonwealth, ACT, and NSW scientific listing determinations, action plans, recovery plans, conservation advices, etc., for the threatened ecological communities and their constituent threatened species in our region. Examples of this primary relevance to this study are the Commonwealth Conservation Advice for Natural Temperate Grassland of the South Eastern Highlands (TSSC 2016[7]), the ACT Natural Temperate Grassland Endangered Ecological Community Action Plan (ACT Government 2017[8]), the ACT Nature Conservation (Natural Temperate Grassland) Conservation Advice 2020 (ACT Government 2020[9]), and the ACT Nature Conservation (Pink-tailed Worm-lizard) Action Plan (ACT Government 2017[10]).

As outlined in the detailed review by Downey (2026 in prep[11]), African Lovegrass is characterised by a combination of broad compatibility across the relevant abiotic factors (soil type, rainfall/moisture, frost and drought tolerance etc.), plentiful seed production, highly effective dispersal especially where assisted by vectors, general absence of effective natural controls, and high cost with relatively low efficacy across available human control methods. These characteristics have facilitated the infestation and then extensive spread of African Lovegrass such that it now occurs as the dominant C4 summer growing grass on most road verges and other public land, as well as across extensive areas of private freehold land (NSW) and leasehold land (ACT) other than where such land is managed as productive agricultural land where intensive cropping and/or pasture improvement restricts the species. As discussed by Downey (2026 in prep), most of the available information and advice regarding effective control methods for African Lovegrass relate to its control on productive land, however these methods rely primarily on outcompeting African Lovegrass via active

[7] Threatened Species Scientific Committee (2016). *Approved Conservation Advice (including listing advice) for Natural Temperate Grassland of the South Eastern Highlands (EC 152)*. Department of the Environment, Canberra.
[8] ACT Government (2017). *ACT Natural Temperate Grassland Endangered Ecological Community Action Plan*.
[9] ACT Government (2020). *Nature Conservation (Natural Temperate Grassland) Conservation Advice 2020*. Notifiable instrument NI2020–303. Environment, Planning and Sustainable Development. 22 May 2020.
[10] ACT Government (2017). *Nature Conservation (Pink-tailed Worm-lizard) Action Plan 2017*. Disallowable instrument DI2017–67. Environment, Planning and Sustainable Development. 30 May 2017.
[11] Downey, P.O. (2026). *African Lovegrass management: a review.* Unpublished report prepared for the Ginninderry Conservation Trust, Canberra.

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establishment and encouragement of exotic pasture grasses and forbs (generally involving sowing or top-dressing of exotic species with superphosphate and/or urea). Such methods are entirely incompatible with protection of temperate natural grassland and grassy woodland ecological communities which occur on soils of generally low fertility.

Given that African Lovegrass had a considerable presence in parts of the GCC and adjoining farmland prior to establishment of the GCC, that the key Matters of National Environmental Significance (MNES) the GCC was established to protect are highly susceptible to African Lovegrass infestation, and that the difficulty in controlling African Lovegrass in non-productive environments is evident (as discussed by Downey [2026 in prep] but known for several decades to the case), it is our view that effective control of the species in the GCC was always going to present an incredibly difficult management challenge for the GCT. It is also important to recognise that the increase in the spatial extent and density of infestation of African Lovegrass over the past several years has not occurred exclusively in the GCC (something also noted by Downey [2026 in prep]), rather it has occurred at most of the sites Capital Ecology has completed surveys and monitoring on, including in Canberra Nature Park (CNP) reserves, ACT environmental offset sites, and in several NSW Biodiversity Stewardship Sites. Accordingly, it is clear that the challenge of controlling African Lovegrass on conservation lands, including where substantial funding and labour is expended on the cause, is significant and is generally not being successfully met.

Notwithstanding the above, the reduction in extent of EPBC Act NTG-SEH (Zone 1 and Zone 2) of 4.42 ha (10.66%) from March 2020 to March 2026 (six years), all of which has transitioned to the African Lovegrass dominant Zone 4C, is significant. Additionally, the overall increase of 8.19 ha (231.34%) of the African Lovegrass dominant Zone 4C, most of the balance 3.77 ha of which has transitioned from native pasture (ACT01 - Zone 3), exotic pasture (ACT01 - Zone 4A), and stock camps (ACT01 - Zone 4B), shows that the cause of change has been singularly driven by African Lovegrass proliferation. Indeed, during our on-ground mapping surveys we did not observe any other cause of the reduction in the extent or quality of the NTG-SEH or PTWL habitat in the GCC.

In addition to the reduction in NTG-SEH extent reported herein, we believe that the primary cause for concern is the trajectory with regard to the continued proliferation of African Lovegrass and loss of NTG-SEH and Suitable Quality PTWL habitat. It is important to note that the vegetation zone mapping delineates between areas of vegetation composition and condition at the patch scale, it does not identify all occurrences of African Lovegrass in the GCC. Even within the remaining larger patches of NTG-SEH there are single tussocks or small clumps of African Lovegrass, with these likely establishing from seed deposited there by cattle, and there are numerous locations where vehicle access tracks traversing NTG-SEH patches are fringed by the species. Combined with the invasive pressure from the mapped African Lovegrass dominant Zone 4C around the borders of the remaining patches of NTG-SEH, these incursions within the patches will act as spot fires of infestation growing from within the patches. Given these factors, and the increase in African Lovegrass extent from 2020 to 2026 reported herein, we conservatively estimate that the current trajectory would see an increase in African Lovegrass extent, and thereby a corresponding reduction in the NTG-SEH extent, of a further 20% over the next five years.

In light of the above, and with the objective of changing the above-described trajectory, we note that the GCT has commissioned the review by Downey (2026 in prep) to review the African Lovegrass management options being trialled locally with the aim of identifying and advising on recommended options for application in the GCC. Downey (2026 in prep) has concluded that –

> *"This review of African Lovegrass management has highlighted that no single control technique or approach has been advocated for African Lovegrass. Thus, a rethink on a more integrated*

management approach for African Lovegrass is needed, that is targeted to the management outcome; something that is especially the case for managing African Lovegrass in a non-pasture production / management context (i.e. for asset protection).”

Further, using the Biosecurity Risk Management System (Downey 2023[12]), Downey (2026 in prep) –

“produced two outcomes based on the spatial distribution of African Lovegrass, being (1) containment of African Lovegrass in areas where it is not widely established, and (2) asset protection in areas where there are high conservation value assets like Pink-tailed Worm-lizards (need to add references here) and Box Gum Woodlands and [add other assets].”

We understand that the GCT intends to carry these outcomes forward as key objectives of an African Lovegrass Management Plan (or similarly titled management plan) which will be developed and implemented to specifically direct the future management of this biosecurity challenge in the GCC. Importantly, this management plan will prescribe the management of grazing (cattle or other stock) in the GCC and will provide information for inclusion in a forthcoming review and update of the Bushfire Management Plan (Eco Logical 2021[13]).

Whilst the particulars for the management of the African Lovegrass in the GCC will be determined during development of the above-noted management plan, as informed by Downey (2026 in prep) and in consultation with weed control contractors and other relevant experts, we offer the following key recommendations with the objective of curbing the further proliferation of African Lovegrass and resulting loss of NTG-SEH and Suitable Quality PTWL habitat.

1. Being a primary vector of African Lovegrass spread in the GCC, cattle grazing in the mapped NTG-SEH (and EPBC Act Box-Gum Woodland) should cease as soon as this can be practicably achieved. As noted above, even the larger patches of more intact NTG-SEH have small spot fires of African Lovegrass in them, likely establishing from seed deposited there by cattle (probably combined with a substantial contribution from macropods, Common Wombat [*Vombatus ursinus*], and feral deer). Each of the small, unformed tracks in the northern parts of the study area are also fringed by African Lovegrass, suggesting that seed has been deposited by vehicles and/or by cattle walking along the tracks.

   Where cattle grazing is required for bushfire asset protection purposes, then this should be achieved by establishment of asset protection zones (APZs) composed of land outside of the NTG-SEH (i.e. be composed of Zone 3 or Zone 4 only).

   We appreciate that the terrain and highly disjointed patch formation of the NTG-SEH in the GCC make achieving this recommendation a substantial and costly undertaking (i.e. conventional fencing is likely to be impracticable). As such, it is our view that it would be best achieved via a phased approach where grazing is carefully timed to occur only when African Lovegrass is not at seed, combined with the incorporation of ‘virtual fencing’ (where cattle movement is controlled by GPS-guided collars) and the other innovative stock management tools that we understand the GCT is currently investigating and proposes to implement.

2. Implement a program of targeted spot spraying (using Flupropanate and/or Glyphosate by or under direction of competent operators) within and around the border of all remaining

[12] Downey, P.O. (2023). *Terrestrial Weed Biosecurity Risk Management System. Version 6*. A technical manual prepared for the Queanbeyan-Palerang Regional Council and the South East Local Land Services, Bungendore.
[13] Eco Logical (2021). *Ginninderry Conservation Corridor Bushfire Management Plan*. Final - dated: 11 May 2021.

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patches of NTG-SEH. Without intensive, concerted control, the African Lovegrass around the border of NTG-SEH patches will continue to compress and reduce the patch, and the single tussocks and small clumps within the patches will grow and spread outwards, the combined effect being that the patch is overrun by African Lovegrass and lost.

I trust that this report provides the assessment, information and advice required. If, however, you should have any questions relating to this report, please do not hesitate to contact me.

Yours sincerely,



Robert Speirs
Director / Principal Ecologist

Attachments

Figure 1. Study Area on March 2026 Aerial Imagery

Figure 2. 2026 Grassland Vegetation Mapping Results

Figure 3. 2026 EPBC Act Natural Temperate Grassland or the South Eastern Highlands

Figure 4. Change in EPBC Act NTG-SEH extent from 2020 to 2026

Figure 5. 2026 Pink-tailed Worm-lizard Habitat Mapping and Comparison with 2013 Habitat Mapping

Figure 6. 2013 Suitable PTWL Habitat in ACT PCT01 which is 2026 Low PTWL Habitat – Cause of Change

Appendix A. Ginninderry Conservation Trust (2026). *Natural Temperate Grassland – Floristic Monitoring 2026*.

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0 250 500 750 m

Scale 1:11,000 @ A3, GDA 2020, MGA Zone 55

N

Acknowledgement: Image (c) ACT Government Mar 2026 CC4.0

Legend

Study Area - Ginninderry Conservation Corridor - ACT - Oct 2026 (376.17 ha)

Australian Capital Territory Border

Figure 1. Study Area on March 2026 Aerial Imagery

Capital Ecology Project No: 2916 & 3466
Drawn by: R. Speirs
Date: 17 November 2026

capital ecology

0 200 400 600 m

Scale 1:6,500 @ A3, GDA 2020, MGA Zone 55

N

Acknowledgement: Image (c) ACT Government Mar 2026 CC4.0 (70% opacity)

Legend

Ginninderry Conservation Corridor - ACT - Oct 2026

Australian Capital Territory Border

2026 PCT-ACT01 Tablelands Dry Tussock Grassland

Estimated maximum 1750 extent of Natural Grasslands

PCT ACT01 - Zone Mapping - 2026 (Cut to ACT GCC - Oct 2026)

ACT01 - Zone 1 - Native Dominant - High Forb Diversity

ACT01 - Zone 2 - Native Dominant - Moderate Forb Diversity

ACT01 - Zone 3 - Native Dominant - Low Forb Diversity

ACT01 - Zone 4A - Exotic = Pasture and Agricultural Weed Species

ACT01 - Zone 4B - Exotic = Stock Camp

ACT01 - Zone 4C - Exotic = Noxious Weed Species (ALG)

Urban/Cleared

Figure 2. 2026 Grassland Vegetation Mapping Results

Capital Ecology Project No: 2916 & 3466
Drawn by: R. Speirs
Date: 26 October 2026

capital ecology

0 200 400 600 m

Scale 1:6,500 @ A3, GDA 2020, MGA Zone 55

N

Acknowledgement: Image (c) ACT Government Mar 2026 CC4.0 (70% opacity)

Legend

Ginninderry Conservation Corridor - ACT - Oct 2026

Australian Capital Territory Border

Estimated maximum 1750 extent of Natural Grasslands

EPBC Act - Natural Temperate Grassland - South Eastern Highlands - 2026 (Cut to ACT GCC)

EPBC Act NTG-SEH - High-VeryHigh

EPBC Act NTG-SEH - Mod-High

Figure 3. 2026 EPBC Act Natural Temperate Grassland of the South Eastern Highlands (NTG-SEH)

Capital Ecology Project No: 2916 & 3466
Drawn by: R. Speirs
Date: 26 October 2026

capital ecology

0 200 400 600 m

Scale 1:6,500 @ A3, GDA 1994, MGA Zone 55

N

Acknowledgement: Image (c) ACT Government Mar 2026 CC4.0 (70% opacity)

Legend

Ginninderry Conservation Corridor - ACT

Estimated maximum 1750 extent of Natural Grasslands

2020 EPBC Act - Natural Temperate Grassland - South Eastern Highlands

EPBC Act NTG-SEH - High-VeryHigh

EPBC Act NTG-SEH - Mod-High

2026 EPBC Act - Natural Temperate Grassland - South Eastern Highlands

EPBC Act NTG-SEH - High-VeryHigh

EPBC Act NTG-SEH - Mod-High

Figure 4. Change in EPBC Act NTG-SEH extent from 2020 to 2026

capital ecology

Capital Ecology Project No: 2916 & 3466
Drawn by: R. Speirs
Date: 25 August 2026

0 250 500 750 m

Scale 1:10,250 @ A3, GDA 2020, MGA Zone 55

N

Acknowledgement: Image (c) ACT Government Mar 2026 CC4.0 (70% opacity)

Legend

Ginninderry Conservation Corridor - ACT - Oct 2026

Australian Capital Territory Border

Osborne & Wong 2013 PTWL Habitat Classification

Low Quality

Suitable Quality

Capital Ecology 2026 PTWL Habitat Classification

Low Quality

Suitable Quality

Figure 5. 2026 Pink-tailed Worm-lizard Habitat Mapping and Comparison with 2013 Habitat Mapping

Capital Ecology Project No: 2916 & 3466
Drawn by: R. Speirs
Date: 26 October 2026

capital ecology

0 250 500 750 m

Scale 1:6,500 @ A3, GDA 1994, MGA Zone 55

N

Acknowledgement: Image (c) ACT Government Mar 2026 CC4.0 (70% opacity)

Legend

- Ginninderry Conservation Corridor - ACT - Oct 2026
- Australian Capital Territory Border
- Estimated maximum 1750 extent of Natural Grasslands
- Osborne & Wong 2013 Suitable Quality PTWL Habitat

ACT01 Grassland - 2013 Suitable Habitat now 2026 Low Habitat - Cause of change

- Pasture and agricultural weed species
- Stock camp
- Noxious weed species (ALG)
- Urban/Cleared

Figure 6. 2013 Suitable PTWL Habitat in ACT PCT01 which is 2026 Low PTWL Habitat – Cause of Change

Capital Ecology Project No: 2916 & 3466
Drawn by: R. Speirs
Date: 26 October 2026

capital ecology

Appendix A. Ginninderry Conservation Trust (2026). Natural Temperate Grassland – Floristic Monitoring 2026.

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Natural Temperate Grassland – Floristic Monitoring 2026

Date of surveys

16/03/26, 17/03/26, 23/03/26, 24/03/26 & 7/04/26

Methodology

The purpose of this monitoring was to determine the floristic composition and structure of each grassland vegetation Zone (PCT-ACT01, Zones 1, 2, 3 & 4).

As per Rehwinkel (2015) 20 m x 20 m (400 m2) plots were completed in locations deemed to have the highest floristic diversity within each vegetation zone (16 plots), originally identified by Capital Ecology (2020).

1. The north-west corner point of the plot was recorded with FieldMaps and where possible the orange marker installed by Capital Ecology in 2020 was used. The plot was then established using a compass, with the x axis running 90 degrees (due east), and the y axis running 180 degrees (due south). The plot was then marked using three measuring tapes (two tapes for side boundaries and one to define the diagonal).

2. Braun-Blanquet cover/abundance scores were assigned for each species recorded within the plot.

Cover/Abundance	Explanation
1	< 5% cover and solitary (<4 individuals)
2	< 5% cover and few (4-15 individuals)
3	< 5% cover and numerous/scattered (>15 individuals)
4	5% to < 25% cover
5	25% to < 50% cover
6	50% to < 75% cover
7	75% cover and greater

3. One 50 m step-point transect was completed to accompany each plot. At each 1 m point along the step-point transect the ground layer was allocated to one of the following options:
    - Cryptogams (Moss/Lichen)
    - Bare Earth
    - Rocks
    - Litter/Dead Vegetation
    - Annual Exotic Grass
    - Perennial Exotic Grass
    - Exotic Broadleaf
    - Perennial Native Grass
    - Other native

4. Data was entered into Excel to calculate the floristic value scores (FVS), species richness, and other characterising features of the vegetation zones. The Excel template was provided by Capital Ecology (2020).

Results

A summary of results is included in the Appendices.

Floristic Value Scoring

To align with the study conducted by Capital Ecology (2020), two FVS have been provided. This is to account for the reduced value applied to some indicator species which occur commonly throughout the Corridor and the ACT more broadly. For further information regarding the rationalisation for adjusting 'species significance values' please refer to the Capital Ecology report (2020).

Table 1: Species Significance Ratings Adjustments

Species Significance Rating	Species	Recorded in Zone
Adjusted from '***Level A***' to '***Level B'***	*Desmodium varians* *Glycine tabacina* *Lomandra filiformis-coriacea* *Themeda triandra* *Tricoryne elatior*	Zone 1, Zone 2, Zone 3, Zone 4 Zone 1, Zone 2, Zone 3, Zone 4 Zone 1, Zone 2, Zone 3, Zone 4 Zone 1, Zone 2, Zone 3, Zone 4 Zone 1, Zone 2, Zone 3, Zone 4
Adjusted from '***Level B***' to '***Level C'***	*Wahlenbergia communis*	Zone 1, Zone 2, Zone 3, Zone 4

The above species were recorded in all vegetation zones, including moderately to highly disturbed native pasture (PCT-ACT01 Zone 3) and highly disturbed exotic pasture (PCT-ACT01 Zone 4).

Accordingly, two different FVS Scenarios have been calculated.

Discussion

Table 2: Floristic Value Score – Scenarios 1 & 2

Species Significance Ratings	Average no. of Indicator Species				Average FVS			
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 1	Zone 2	Zone 3	Zone 4
Scenario 1	6	3.75	3	1.25	20.90	12.90	10.93	5.24
Scenario 2	2.75	0.75	0.25	0	14.49	7.23	6.23	3.75

2026 monitoring has demonstrated a reduction in the average FVS for Zone 1. This is mainly due to the increased presence of African Lovegrass (*Eragrostis curvula).* The average FVS for Zones, 2, 3 and 4 have had a slight increase compared to 2020 monitoring conducted by Capital Ecology (*Table 3*).

Table 3: Comparison of 2020 FVS against 2026 FVS

	FVS S1 2020	FVS S1 2026	Net gain/ loss +/- 20/26	FVS S2 2020	FVS S2 2026	Net gain/ loss +/- 20/26
Zone 1	28.76	20.90	-7.86	17.23	14.49	-2.74
Zone 2	12.57	12.90	0.33	6.35	7.23	0.88
Zone 3	8.75	10.93	2.18	4.29	6.24	1.95
Zone 4	4.16	5.24	1.08	2.37	3.75	1.38

Note: *Scenario 2 FVS have been deemed more appropriate for grasslands in the Ginninderry Conservation Corridor, and as such, have been used to determine whether a Zone meets the EPBC Act listing criteria for NTG-SEH.*

The step-point plot-transect data for each of the native dominant vegetation zones was analysed to determine whether the zone meets the listing criteria for the EPBC Act critically endangered ecological community NTG-SEH either as the 'high to very high' or 'moderate to high' condition threshold category (*Table 4*). Condition thresholds can be found in *Appendix 1*.

Table 4: Condition Thresholds for EPBC Act NTG-SEH

Plot ID	Condition Threshold Category	Zone threshold 2020	Zone threshold 2026	Meets EPBC Criteria for NTG-SHE 2026
Gi_01.1.1	High to Very High	Zone 1	Zone 1	Yes
Gi_01.1.2	High to Very High	Zone 1	Zone 1	Yes
Gi_01.1.3	High to Very High	Zone 1	Zone 2	Yes
Gi_01.1.4	High to Very High	Zone 1	Zone 1	Yes
Gi_01.2.1	Moderate to High	Zone 2	Zone 3	No
Gi_01.2.2	Moderate to High	Zone 2	Zone 3	No
Gi_01.2.3	Moderate to High	Zone 2	Zone 1	Yes
Gi_01.2.4	Moderate to High	Zone 2	Zone 3	No
Gi_01.3.1	Low Diversity	Zone 3	Zone 1	Yes
Gi_01.3.2	Low Diversity	Zone 3	Zone 2	Yes
Gi_01.3.3	Low Diversity	Zone 3	Zone 3	No
Gi_01.3.4	Low Diversity	Zone 3	Zone 2	Yes
Gi_01.4.1	Exotic Dominant – Low diversity	Zone 4	Zone 3	No
Gi_01.4.2	Exotic Dominant – Low diversity	Zone 4	Zone 4	No
Gi_01.4.3	Exotic Dominant – Low diversity	Zone 4	Zone 4	No
Gi_01.4.4	Exotic Dominant – Low diversity	Zone 4	Zone 4	No

Transect Data

Results show a decrease in perennial native cover across Zones 1 & 2, with Zone 2 showing a decrease of 17.96%. This decrease can be attributed to site Gi_1.2.1 (*Appendix 4*). Zone 3 & 4 have demonstrated an increase in perennial native cover. The overall result is a net loss of 3.73% in perennial native cover across all plots.

Table 5: Percent Native Perennial 2020/2026

	Average % Native Perennial 2020	Average % Native Perennial 2026	% Net gain/ loss +/- 20/26
Zone 1	62.29	55.49	-6.79
Zone 2	54.76	36.80	-17.96
Zone 3	44.23	56.63	11.41
Zone 4	10.58	20.20	9.62
			-3.73

Actions Required	Weeds of National Significance (WoNs) and declared weeds of the ACT were found throughout the Corridor, including *Eragrostis curvula* (all zones), *Paspalum dilatatum* (Zones 2, 3 & 4) and *Rubus fruticosus*. Other pest plants that were widespread include *Echium vulgare* (all zones), *Hypericum perforatum* (all zones), *Chondrilla juncea* (all zones), *Verbascum thapsus* (all zones), and *Carthamus lanatus* (all zones). The grasslands contain exotic areas dominated by African Lovegrass (*Eragrostis curvula*), with most occurring in the low-lying area along the Murrumbidgee and larger incursions occurring in the south of the Corridor. The north/west section of the Corridor recorded a higher proportion of native species compared to exotics. Where *Eragrostis curvula* has been identified management efforts will be targeted to the high and moderate native zones. In conjunction, other pest plants, such as *Hypericum perforatum*, *Rubus fruitcous* and *Rosa rubiginosa* will also be targeted.
Reference List	Capital Ecology (2020). *The Extent and Condition of Natural Temperate Grassland of the South Eastern Highlands in the Ginninderry Project Area*. Final 02 – July 2020. Prepared for The Riverview Group Pty Ltd. Authors: S. Reid, S. Thompson, and R. Speirs. Project no. 2916. Rehwinkel (2015). *A Revised Floristic Value Scoring Method to assess grassland condition, an addendum to Friends of Grasslands Forum Proceedings* (30 October – 1 November 2014).

Appendices:

Appendix 1: Summary of condition thresholds for EPBC Act Natural Temperate Grassland of the South Eastern Highlands (NTG–SEH) (Capital Ecology, 2020)

<table>
<tr><th>Condition Threshold Category</th><th colspan="2">Scenarios</th><th>Vegetation Zone
Colour as per mapping</th></tr>
<tr><td>High to Very High</td><td colspan="2">1. The percentage cover of native vascular plants (including annual and perennial species) in the patch is greater than the percentage cover of perennial exotic species

AND (in 0.04 ha sampling plots):

2. At any time of the year:
a. At least 12 non-grass native species
OR
b. At least 3 indicator species
OR
c. A floristic value score (FVS) of at least 6.5</td><td>ACT01 – Zone 1</td></tr>
<tr><td rowspan="2">Moderate to High</td><td>‘A’ scenarios</td><td>‘B’ scenarios</td><td></td></tr>
<tr><td>1. The patch is characterised by at least 50 % foliage cover of the ground of Themeda triandra.
OR
2. The patch is characterised by at least 50 % foliage cover of the ground of Poa labillardieri.
OR
3. The patch is characterised by at least 50 % foliage cover of the ground of Carex bichenoviana, or at least 50 tussocks for every 100 m^2.</td><td>1. The percentage cover of native vascular plants (including annual and perennial species) in the patch is greater than the percentage cover of perennial exotic species

AND (in 0.04 ha sampling plots):

2. During favourable sampling times:
a. At least 8 non-grass native species
OR
b. At least 2 indicator species
OR
c. A floristic value score (FVS) of at least 5</td><td>ACT01 – Zone 2</td></tr>
</table>

Appendix 2. Grassland Floristic Plot Data Summary Table

PCT	Zone	Plot ID	Easting	Northing	Native spp.	Indicator spp. Scenario 1	Indicator spp. Scenario 2	Native non-grass spp.	Threatened spp.	Exotic spp.	Significant weeds	Sig weed cover % (level'x' weeds only)	Significant weed spp. (level 'x' weeds in bold)	Floristic Value Score Scenario 1	Floristic Value Score Scenario 2	Weed Value Score	Zone FVS Average Scenario 1	Zone FVS Average Scenario 2
ACT01	1	Gi_01.1.1	678838	6101044	20	5	2	10	0	16	1	< 5	*Eragrostis curvula*	20.08	12.39	12.35	20.90	14.49
		Gi_01.1.2	679561	6099538	24	9	4	16	0	14	1	5 - < 25	*Eragrostis curvula*	26.78	19.09	9.90		
		Gi_01.1.3	679680	6099342	19	4	3	10	0	13	1	50 - < 75	*Eragrostis curvula*	13.76	12.13	11.48		
		Gi_01.1.4	679873	6099628	23	6	2	11	0	16	1	50 - < 75	*Eragrostis curvula*	22.98	14.36	12.96		
	2	Gi_01.2.1	679279	6099729	10	3	1	5	0	15	0	0		10.62	5.96	10.12	12.90	7.23
		Gi_01.2.2	679736	6099434	19	3	0	10	0	20	2	5 - < 25	*Eragrostis curvula* *Paspalum dilatatum*	14.61	7.38	15.93		
		Gi_01.2.3	679764	6100064	18	6	2	12	0	18	1	< 5	*Eragrostis curvula*	18.07	11.16	16.10		
		Gi_01.2.4	678983	6101336	13	3	0	7	0	14	0	0		8.31	4.43	9.37		
	3	Gi_01.3.1	680058	6099628	19	4	0	12	0	19	2	5 - < 25	*Eragrostis curvula* *Paspalum dilatatum*	13.94	7.5	14.78	10.93	6.24
		Gi_01.3.2	679183	6101068	13	3	0	6	0	19	1	< 5	*Eragrostis curvula*	12.32	6.88	11.81		
		Gi_01.3.3	679337	6100671	14	2	0	5	0	21	3	< 5	*Nassella trichotoma* *Eragrostis curvula* *Paspalum dilatatum*	5.55	4	19.57		
		Gi_01.3.4	679474	6099582	15	3	1	6	0	17	2	5 - < 25	*Eragrostis curvula* *Paspalum dilatatum*	11.92	6.56	16.18		
	4	Gi_01.4.1	679147	6101142	15	1	0	7	0	20	1	< 5	*Paspalum dilatatum*	6.95	6.02	16.18	5.24	3.75
		Gi_01.4.2	679402	6100478	11	1	0	6	0	17	1	25 - < 50	*Paspalum dilatatum*	4.03	3.02	11.82		
		Gi_01.4.3	679255	6099838	9	2	0	5	0	13	2	75	*Eragrostis curvula* *Paspalum dilatatum*	6.52	3.26	15.16		
		Gi_01.4.4	679784	6099911	9	1	0	6	0	15	2	5 - < 25	*Eragrostis curvula* *Paspalum dilatatum*	3.47	2.7	12.33		

Appendix 3. Grassland Floristic Plot Species and Cover

Species List	01.1.1	01.1.2	01.1.3	01.1.4	01.2.1	01.2.2	01.2.3	01.2.4	01.3.1	01.3.2	01.3.3	01.3.4	01.4.1	01.4.2	01.4.3	01.4.4
Native																
Acaena ovina	4	1	1		1	1	1									
Anthosachne scaber													3			
Aristida ramosa		1		1		1										
Austrostipa bigeniculata				1					1		3		1			
Austrostipa scabra		1	3	4			3									3
Bothriochloa macra	5	4	5	5	1	5	7	5	5	6	6	5	4	4		4
Calotis lappulacea			1	3								1				
Carex inversa	3		3			4		4	5	4	6	4	4	4		
Cheilanthes sieberi	3	3	4	3			3									
Chloris truncata	3									2	3		4	4		
Convolvulus angustissimus		1		1		1	3									
Cymbopogon refractus			4													
Cynoglossum suaveolens		1		1		1				1			1			1
Desmodium varians		1		2		3			4	1	1		2			
Digitaria sp.		4	4	3		4	4		4	1	3	5	1			
Dysphania pumilio	4	3	4	4	3	4	4	4	4		4	3	2	1	3	3
Enneapogon nigricans	3		2	1			3									
Epilobium sp.		1	1					1	3	3			3	1		
Euchiton sp. (native)					1											
Geranium solanderi						1			1	3		2	3	2	1	
Glycine tabacina	3	1		3			1	1	3							1
Gonocarpus tetragynus		3														
Hypericum gramineum		2														
Juncus sp. (native species)									1		1	1	3	1		
Lomandra filiformis		1					1		1		1			1		
Lomandra longlifolia					2											
Microlaena stipoides				4		3			5	5	5	4	6	4	4	3
Oxalis perennans	4	3	4	5	3	4	3	3	3	3	4	4	3	2	3	3
Panicum effusum	4	2	2	4	3	4	3	3	4	3	4	4			1	
Poa labillardierei (cover of less than 25%; C/A score of 4 or lower)	4	3		1				1	1	5	1	2	3			
Rubus parvifolius							1									
Rumex brownii	2	1	2	1		1	1	1	4	2	4	1	2		1	1
Rytidosperma sp. (native)	4	4	4	3		2				3						
Sorghum leiocladum	1															
Sporobolus creber	1	2		3		4	4	4			4	4			1	
Themeda triandra	5	7		3	3	4	3	5		3		6			4	
Tricoryne elatior	3	3	2	3	3	4	3	1	1	3		3			2	
Vittadinia muelleri	3		1						1							
Wahlenbergia communis	4	3	3	3		1	3		1			3		1		

Exotic																
Acetosella vulgaris		2	4		5	4	3							2	2	
Amaranthus sp.								1			1			2		1
Avena sp.									3	3	3		3	1		3
Bromus sp.		2	1	3		2		4	3	3	4	2	3	1		
Carthamus lanatus	2			3	4	3	4	4	4		5	4	3	4	3	6
Centaurium sp. (exotic)					4											
Centaurium erythraea										1						
Chenopodium sp. (exotic)					1				1							
Chondrilla juncea	4	4	4	3		3	3	3	4	3	4	3	3			3
Conyza sp.	4	1	3	3	4	1	3	4	2	3	3		2		4	
Crataegus monogyna				1		1										
Cucumis myriocarpus					1											
Cyperus eragrostis														3		
Echium vulgare	4	2	3	3	4	4	4	3	4	3	4	3	4	4	3	5
Eleusine tristachya											3					
Eragrostis curvula	3		6	6		4	3	6	2	1	3	4			7	2
Eragrostis cilianensis		4					3	3			3					
Hirschfeldia incana			3								1			3		3
Hypericum perforatum	4	4	4	4	3	4	4	4	3	4	4	3	4	4	4	4
Hypochaeris radicata	3	3	3	3	6	1	3		1	4	3	2	4		4	3
Lolium perenne										1						
Malva sp.	1								3				3			
Modiola caroliniana					2	1	1			2	1		2	3	3	2
Nassella trichotoma											1					
Onopordum acanthium												1				
Paspalum dilatatum						1			4	4	3	3	3	5	4	4
Petrorhagia nanteuilii		1	2	3			1	4		3						
Plantago lanceolata	3				3	3	3	4	4		3	3	3			
Polygonum aviculare														1		
Portulaca oleracea	1		1	1			2	1								1
Prunus sp.																1
Rosa rubiginosa	2	2	1	1	2	3	2		2	3	2	2	3	3	2	2
Rubus fruticosus	1	2		1	2	1	1		1	5	2	1	3	2		1
Salvia verbenaca	3			2		3	3		4		1	4				
Setaria parviflora														2		3
Solanum chenopodioides					1									1		1
Taraxacum sp.	1															
Tolpis barbata	2				2	1										
Tragopogon porrifolius														1		
Trifolium sp. (exotic)	5	2	3	4		6	6	5	6	5	6	6	5	6	4	6
Verbascum thapsus	4	3	3	3	3	3	3	2	1	2	1	3	2	1	2	
Verbena bonariensis					2							1			3	

Carex bichenoviana or Themeda triandra cover >75%	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Cryptogam cover on soil's surface (%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 4. Step-Point Transect Data Summary Table

PCT	Zone	Transect ID	Datum and Zone	Start Easting	Start Northing	Date	Length	Crypt	Bare	Rock	Litter	Annual Exotic Grass	Perennial Exotic Grass	Exotic Broadleaf	Perennial Native Grass	Other Native	% Perennial Native	% Perennial Native CE 2020	% Net gain/ loss per individual plot 20/26	Average % Perennial Native per zone 2026	Average % Perennial Native per zone 2020 CE	% Net gain/ loss +/- per zone 20/26
1	1	Gi_01.1.1	MGA Zone 55	678838	6101044	17/03/2026	50m	0	4	0	8	0	0	16	18	4	57.89	67.44	-9.55	55.49	62.29	-6.80
		Gi_01.1.2	MGA Zone 55	679561	6099538	23/03/2026	50m	0	4	5	5	0	1	5	30	0	83.33	68.18	15.15			
		Gi_01.1.3	MGA Zone 55	679680	6099342	24/03/2026	50m	0	1	3	4	0	20	11	10	1	26.19	58.97	-32.78			
		Gi_01.1.4	MGA Zone 55	679873	6099628	23/03/2026	50m	0	0	3	3	0	13	7	23	1	54.55	54.55	0.00			
	2	Gi_01.2.1	MGA Zone 55	679279	6099729	23/03/2026	50m	0	3	0	18	0	0	26	2	1	10.34	65.22	-54.88	36.80	54.76	-17.96
		Gi_01.2.2	MGA Zone 55	679736	6099434	24/03/2026	50m	0	0	1	3	0	5	23	17	1	39.13	52	-12.87			
		Gi_01.2.3	MGA Zone 55	679764	6100064	24/03/2026	50m	0	0	2	1	0	0	23	23	1	51.06	31.82	17.12			
		Gi_01.2.4	MGA Zone 55	678983	6101336	16/03/2026	50m	0	0	0	5	0	15	9	20	1	46.67	70	-23.33			
	3	Gi_01.3.1	MGA Zone 55	680058	6099628	23/03/2026	50m	0	0	0	1	0	0	24	18	7	51.02	34.69	16.33	55.63	44.23	11.41
		Gi_01.3.2	MGA Zone 55	679183	6101068	16/03/2026	50m	0	4	0	3	0	5	14	21	3	55.81	63.04	-7.23			
		Gi_01.3.3	MGA Zone 55	679337	6100671	17/03/2026	50m	0	0	0	2	3	1	21	19	4	51.11	41.67	9.44			
		Gi_01.3.4	MGA Zone 55	679474	6099582	23/03/2026	50m	0	0	0	2	0	4	13	28	3	64.58	37.5	27.08			
	4	Gi_01.4.1	MGA Zone 55	679147	6101142	16/03/2026	50m	0	0	1	1	1	8	17	22	0	46.81	11.54	35.27	20.20	10.58	9.62
		Gi_01.4.2	MGA Zone 55	679402	6100478	3/06/2026	50m	0	0	1	1	0	4	34	10	0	20.83	14.58	6.25			
		Gi_01.4.3	MGA Zone 55	679255	6099838	3/06/2026	50m	0	8	0	2	0	30	9	1	0	2.5	4.76	-2.26			
		Gi_01.4.4	MGA Zone 55	678838	6101044	23/03/2026	50m	0	1	0	2	0	0	42	5	0	10.64	11.43	-0.79			
																			-17.04			-3.73

Appendix 5: Map of Plot-Transects

