Tanami Gas Pipeline Princess Parrot Rehabilitation Monitoring Report 2025

Australian Gas Infrastructure Group

ecological AUSTRALIA
A TETRA TECH COMPANY

1300 646 131
www.ecoaus.com.au

DOCUMENT TRACKING

Project Name	Tanami Gas Pipeline Princess Parrot Rehabilitation Monitoring Report 2025
Project Number	24PER9249
Project Manager	**Jeni Morris**
Prepared by	**Jeni Morris**
Reviewed by	**Jeff Cargill**
Approved by	**Jeff Cargill**
Status	**Final**
Version Number	**V2**
Last saved on	**4 July 2025**

This report should be cited as 'Eco Logical Australia 2025. *Tanami Gas Pipeline Princess Parrot Rehabilitation Monitoring Report 2025*. Prepared for Australian Gas Infrastructure Group.'

ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd with support from Australian Gas Infrastructure Group.

Disclaimer

This document may only be used for the purpose for which it was commissioned and in accordance with the contract between Eco Logical Australia Pty Ltd and Australian Gas Infrastructure Group. The scope of services was defined in consultation with Australian Gas Infrastructure Group, by time and budgetary constraints imposed by the client*, and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information. Eco Logical Australia Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report and its supporting material by any third party. Information provided is not intended to be a substitute for site specific assessment or legal advice in relation to any matter. Unauthorised use of this report in any form is prohibited.*

Template 2.8.1

Contents

© ECO LOGICAL AUSTRALIA PTY LTD

List of Figures

List of Tables

© ECO LOGICAL AUSTRALIA PTY LTD

Abbreviations

Abbreviation	Description
AGIG	Australian Gas Infrastructure Group
BoM	Bureau of Meteorology
ELA	Eco Logical Australia
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
ha	hectare
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature
km	kilometre
m	metre
mm	millimetre
MNES	Matters of National Environmental Significance
NT	Northern Territory
RoW	Right of Way
TNP	Tanami Newmont Gas Pipeline
TPWCA	Northern Territory *Parks and Wildlife Conservation Act 2006*
WoNS	Weeds of National Significance

© ECO LOGICAL AUSTRALIA PTY LTD

Executive Summary

The Tanami Newmont Gas Pipeline is a 440-kilometre pipeline connecting the existing Amadeus Gas Pipeline to the Granites and Dead Bullock Soak mines. Following rehabilitation monitoring undertaken by Eco Logical Australia in 2022, it was found that the Matters of National Environmental Significance habitat zone (Princess Parrot habitat) had satisfied three of the four assigned completion criteria, (namely native perennial flora species density, native perennial flora species richness and weed foliage cover), but had failed to meet completion criteria for the native flora species foliage cover. Subsequent rehabilitation monitoring by Eco Logical Australia in 2023 and 2024 found that the Matters of National Environmental Significance habitat zone (Princess Parrot habitat) continued to fail to meet completion criteria for the native flora species foliage cover. As such, Eco Logical Australia was engaged by Australian Gas Infrastructure Group in 2025 to undertake annual rehabilitation monitoring for native flora species foliage cover at five vegetation monitoring sites along the Tanami Newmont Gas Pipeline. Assessment of botanical values was undertaken in view of minimum standards outlined in the flora and vegetation rehabilitation completion criteria, as specified in the approved Australian Gas Infrastructure Group *Tanami Newmont Gas Pipeline Rehabilitation Plan*, prepared by Eco Logical Australia in 2018.

A total of five vegetation monitoring sites, each comprising an impact (rehabilitation) quadrat and an adjacent control quadrat (ten quadrats in total), were surveyed from 30 April to 5 May 2025 by Dr. Jeff Cargill (Principal Botanist) and Daniel Brassington (Senior Botanist). Vegetation monitoring sites within the Matters of National Environmental Significance habitat zone (Princess Parrot habitat) were consistent with the 2024 monitoring surveys (e.g., sites 1, 4, 5, 7 and 10). Vegetation monitoring sites were initially chosen to ensure appropriate spatial distance within the MNES habitat zone (Princess Parrot habitat), as identified and outlined in the *Tanami Newmont Gas Pipeline Rehabilitation Plan*.

No Threatened or significant flora species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* Act or Northern Territory *Parks and Wildlife Conservation Act 2006* were recorded within the vegetation monitoring sites.

A total of nine introduced (weed) species were recorded within the vegetation monitoring sites, namely **Bidens bipinnata*, **Cenchrus ciliaris*, **Cenchrus setiger, *Citrullus colocynthis*, **Cynodon dactylon*, **Eragrostis cylindriflora, *Eragrostis minor, *Eragrostis trichophora* and **Tribulus terrestris*. Of these, none are listed as Declared Weeds or Weeds of National Significance in the Northern Territory. Weed control in these areas to reduce current **Cenchrus ciliaris* (Buffel grass) cover and mitigate further spread should be considered (particularly in creekline/low-lying environments).

The Matters of National Environmental Significance habitat zone (Princess Parrot habitat) did not satisfy minimum requirements for native perennial flora species foliage cover, achieving 48.76% of the control values (Control: 45.24 ± 12.60; Rehabilitation: 22.06 ± 9.73).

Corymbia opaca was recorded within rehabilitation monitoring quadrat 4A (1 plant, 0.2% cover, 1 metre tall) in 2025. Early intervention to remove this individual, and any other *C. opaca* individuals within the vicinity, is recommended to avoid establishment of these large, deep-rooted trees above the natural gas pipeline.

© ECO LOGICAL AUSTRALIA PTY LTD

1. Introduction

1.1. Project background

Australian Gas Infrastructure Group (AGIG) completed construction of the Tanami Newmont Gas Pipeline (TNP), a 440-kilometre (km) pipeline connecting the existing Amadeus Gas Pipeline to the Granites and Dead Bullock Soak mines to transport natural gas to displace the use of diesel fuel at the two mines. The TNP passes through Aboriginal Freehold, Pastoral Land and Crown Land tenures.

Temporary disturbance of a 25 metre (m) Right of Way (RoW) was required to construct the TNP as well as four construction camps, access tracks and a temporary water storage during construction. The total area impacted covered 1,161 hectares (ha) of native vegetation.

Majority of the alignment, excluding permanent facilities and 26 ha of required access tracks, has been rehabilitated post-construction and allowed to return to native vegetation. Effective rehabilitation will manage potential impacts from:

- Long-term loss of flora and vegetation communities;
- Soil disturbance and soil compaction;
- Introduction and/or spread of weed species;
- Long-term disturbance, fragmentation and loss of flora and fauna habitat (including for Matters of National Environmental Significance [MNES]); and
- Landform instability (reducing the potential for erosion and sedimentation of surrounding water bodies).

1.2. Environmental values

Environmental values relevant to the TNP focuses on habitat values for MNES. More specifically, threatened flora and fauna species relevant to the TNP include:

- Greater Bilby (*Macrotis lagotis*);
- Great Desert Skink (*Liopholis kintorei*);
- Night Parrot (*Pezoporus occidentalis*); and
- Princess Parrot (*Polytelis alexandrae*).

Distinct rehabilitation zones for both native vegetation and MNES habitat for species outlined above were defined, with vegetation monitoring sites chosen to ensure appropriate replication within each of the four defined zones, as outlined in the *Tanami Newmont Gas Pipeline Rehabilitation Plan* (Eco Logical Australia [ELA] 2018a; **Figure 1.1**). Several monitoring sites are recognised as potentially supporting multiple MNES and are therefore represented within more than one rehabilitation zone. For example, monitoring site 10 was established in habitat potentially supporting Greater Bilby, Great Desert Skink, Night Parrot, and Princess Parrot.

© ECO LOGICAL AUSTRALIA PTY LTD

Table 1.1: Rehabilitation zones outlined in the *Tanami Newmont Gas Pipeline Rehabilitation Plan* (ELA 2018a)

Rehabilitation zone	Zone description (ELA 2018a)	Representative monitoring sites
Native vegetation zone	Defined as all native vegetation within the Project Area, excluding areas mapped as MNES habitat zones below.	3, 6, 8, 11, 12, 13, 14, 15, 17
MNES habitat zone (Greater Bilby and Great Desert Skink habitat)	*Eucalyptus*/*Corymbia*/*Acacia* woodlands over *Triodia* hummocks, and *Melaleuca* and *Acacia* shrublands over *Triodia* hummocks, on sandplains and paleodrainage channels and in proximity to recent records in the north and the south of the Project Area.	2, 5, 7, 9, 10, 16
MNES habitat zone (Night Parrot habitat)	*Triodia* dominated grasslands and *Astrebla* dominated shrubby samphire and chenopod associations with scattered trees and shrubs within the Project Area.	2, 5, 7, 9, 10, 16
MNES habitat zone (Princess Parrot habitat)	Sandplain woodlands and shrublands, dominated by scattered *Eucalyptus*, *Casuarina* or *Allocasuarina*, with an understorey of *Acacia*, *Eremophila*, *Grevillea*, *Hakea*, *Senna* and ground cover of *Triodia*; and riparian areas dominated by large *Eucalyptus* or *Allocasuarina* within the Project Area. Rehabilitation completion criteria in this zone relates only to understorey and ground cover species.	1, 4, 5, 7, 10

1.3. Objectives

Following rehabilitation monitoring undertaken by ELA in 2022, it was found that the MNES habitat zone (Princess Parrot habitat) had satisfied three of the four assigned completion criteria, (namely native perennial flora species density, native perennial flora species richness and weed foliage cover), but had failed to meet completion criteria for the native flora species foliage cover. Subsequent rehabilitation monitoring by ELA in 2023 and 2024 found that the MNES habitat zone (Princess Parrot habitat) continued to fail to meet completion criteria for the native flora species foliage cover. As such, ELA was engaged by AGIG in 2025 to undertake annual rehabilitation monitoring for native flora species foliage cover at five vegetation monitoring sites along the TNP, each of which comprises an impact (rehabilitation) and an adjacent control quadrat (ten quadrats in total; **Figure 1.1**). Vegetation monitoring sites, established by ELA in 2020, were established to ensure appropriate spatial distance within each of the rehabilitation zones identified and outlined in the approved *Tanami Newmont Gas Pipeline Rehabilitation Plan* (ELA 2018a).

The purpose of this report is to assess progression of the MNES habitat zone (Princess Parrot habitat) rehabilitation towards achievement of approved completion criteria (namely native flora species foliage cover) to provide a comparison of results between 2020, 2021, 2022, 2023 and 2024, and to identify where contingency actions need to be implemented to manage any risks to rehabilitation outcomes.

1.4. Legislative context

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Australian Government's key piece of environmental legislation. The EPBC Act enables the Australian Government to join with the states and territories in providing a truly national scheme of environment and heritage protection and biodiversity conservation. The EPBC Act focuses Australian Government interests on the protection of MNES, with the states and territories having responsibility for matters of state and local significance.

The Northern Territory (NT) *Parks and Wildlife Conservation Act 2006* (TPWCA) is the primary legislative framework for managing the protection and conservation of biodiversity in the NT. The TPWCA legislative framework includes mechanisms for the classification and management of wildlife; classification and control of feral animals; permitting requirements to take wildlife and; designation and management of protected lands. The TPWCA determines the conservation status of flora and fauna species utilising an analogous classification system and criteria to that developed by the International Union for the Conservation of Nature (IUCN).

Classification categories for flora listed under the Commonwealth EPBC Act and the NT TPWCA are listed in **Appendix A**.

1.5. Completion criteria

AGIG are ultimately responsible for the successful rehabilitation of the construction RoW to meet approved completion criteria, as outlined in the AGIG *Tanami Newmont Gas Pipeline Rehabilitation Plan* (ELA 2018a; **Table 1.2**). The following report outlines results of monitoring of the MNES habitat zone (Princess Parrot habitat) against criteria outlines under MNES habitat rehabilitation zone completion criteria below.

Table 1.2: Rehabilitation completion criteria (ELA 2018a)

Aspect	Native vegetation rehabilitation zone completion criteria	MNES habitat rehabilitation zone completion criteria
Native flora species density (plants per m^2)	Perennial native flora species diversity is equal to or greater than 50% of that of the adjacent control area.	Perennial native flora species density is equal to or greater than 70% of that of the adjacent control area and reflects the MNES habitat rehabilitation zone requirements
Native flora species richness (per quadrat)	Perennial native flora species richness is equal to or greater than 50% of that of the adjacent control area and reflects the species composition present in the pre-disturbed habitat type. Note that within 4 m either side of the pipeline, the completion criteria will only apply to ground cover species and not to tree species, which are not suitable to grow in close proximity to the pipeline. Tree species will be allowed to recover outside of the 8 m corridor.	Perennial native flora species richness is equal to or greater than 70% of that of the adjacent control area and reflects the species composition present in the pre-disturbed habitat type. Note that within 4 m either side of the pipeline, the completion criteria will only apply to ground cover species and not to tree species, which are not suitable to grow in close proximity to the pipeline. Tree species will be allowed to recover outside of the 8 m corridor.
Native flora species foliage cover (%)	Percentage of foliage cover of perennial native flora species indigenous to each vegetation community is equal to or greater than 50% of that of the adjacent control area and reflects the pre-disturbed habitat type. Note that within 4 m either side of the pipeline, the completion criteria will only apply to ground cover species and not to	Percentage of foliage cover of perennial native flora species indigenous to each vegetation community is equal to or greater than 70% of that of the adjacent control area and reflects the pre-disturbed habitat type. Note that within 4 m either side of the pipeline, the completion criteria will only apply to ground cover species and not to tree species, which are not suitable to grow in close proximity to the

Aspect	Native vegetation rehabilitation zone completion criteria	MNES habitat rehabilitation zone completion criteria
	tree species, which are not suitable to grow in close proximity to the pipeline. Tree species will be allowed to recover outside of the 8 m corridor.	pipeline. Tree species will be allowed to recover outside of the 8 m corridor.
Weed foliage cover (%)	Percentage of foliage cover of Declared species under the Weeds Management Act, Weeds of National Significance (WONS) and Buffel grass (**Cenchrus ciliaris*) is not greater than that of the adjacent control area at 12 months, 24 months and 36 months.	Percentage of foliage cover of Declared species under the Weeds Management Act, Weeds of National Significance (WONS) and Buffel grass (**Cenchrus ciliaris*) is not greater than that of the adjacent control area at 12 months, 24 months and 36 months.

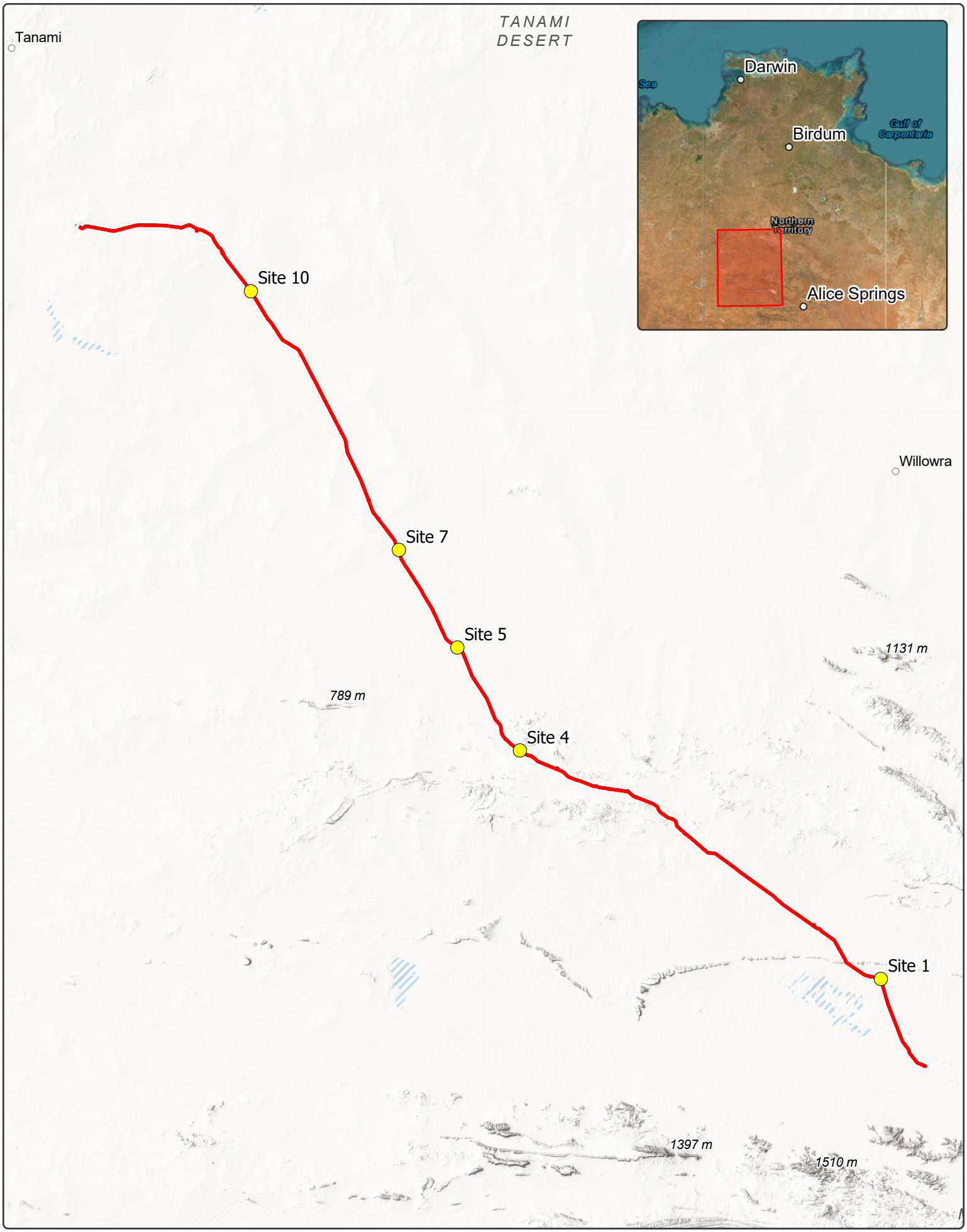


Figure 1.1: MNES habitat zone (Princess Parrot habitat) monitoring site overview

Vegetation monitoring site

Tanami Newmont Gas Pipeline

N

0 30 60

Kilometres

Datum/Projection:
GDA 1994 MGA Zone 52

24PER9249-DH Date: 6/10/2025

ecological AUSTRALIA
A TETRA TECH COMPANY

2. Environmental setting

2.1. Climate

The Tanami Gas Pipeline Project Area traverses bioregions with typically arid to semiarid and tropical climates and monsoonal influences, with monsoonal events typically occur over the 'wet season' between November and April (Bastin and the ACRIS Management Committee 2008).

Rabbit Flat weather station (station number 15666; climate data 1996-present) and Alice Springs Airport weather station (station number 15590; climate data 1940-present) are the nearest Bureau of Meteorology (BoM) weather stations to either end of the TNP with active, complete and uncompromised rainfall data sets. In the 12 months preceding the May 2025 field survey, the region received a total of 323.4 millimetre (mm) and 230.6 mm at Rabbit Flat and Alice Springs Airport respectively. This is less than the long-term average for Rabbit Flat (490.2 mm) and the long-term average for Alice Springs Airport (284.4 mm). In the three months preceding the field survey, the north (Rabbit Flat) received 66.0 mm which less than the long-term average (178.8 mm) for the same time period, and the south (Alice Springs Airport) received 143.4 mm which greater than the long-term average (90.7 mm; BoM 2025; **Plate 2-1**).

Annual rainfall recorded from the Rabbit Flat weather station in 2024 was higher than the 20-year average (966.4 mm in 2024 compared with 481.9 mm average from 2004-2024). Annual rainfall recorded from the Alice Springs Airport weather station in 2024 was higher than the 20-year average (364 mm in 2024 compared with 278.3 mm average from 2004-2024; **Plate 2-2**).

Mean maximum temperatures in the region ranged from 26°C in June to 39°C in December in the north (Rabbit Flat) and 19.9°C in June and July to 36.5°C in January in the south (Alice Springs Airport). Mean minimum temperatures in the region range from 6.8°C in July to 24.2°C in January in the north (Rabbit Flat) and 3.9°C in July to 21.6°C in January in the south (Alice Springs Airport).

Rainfall and temperature data recorded from the Rabbit Flat (15666) and Alice Springs Airport (15590) weather stations 12 months prior to the field survey compared to the long-term average (BoM 2025) is presented in **Plate 2-1** below. Total yearly rainfall data from 2004-2024 is presented in **Plate 2-2**.

© ECO LOGICAL AUSTRALIA PTY LTD

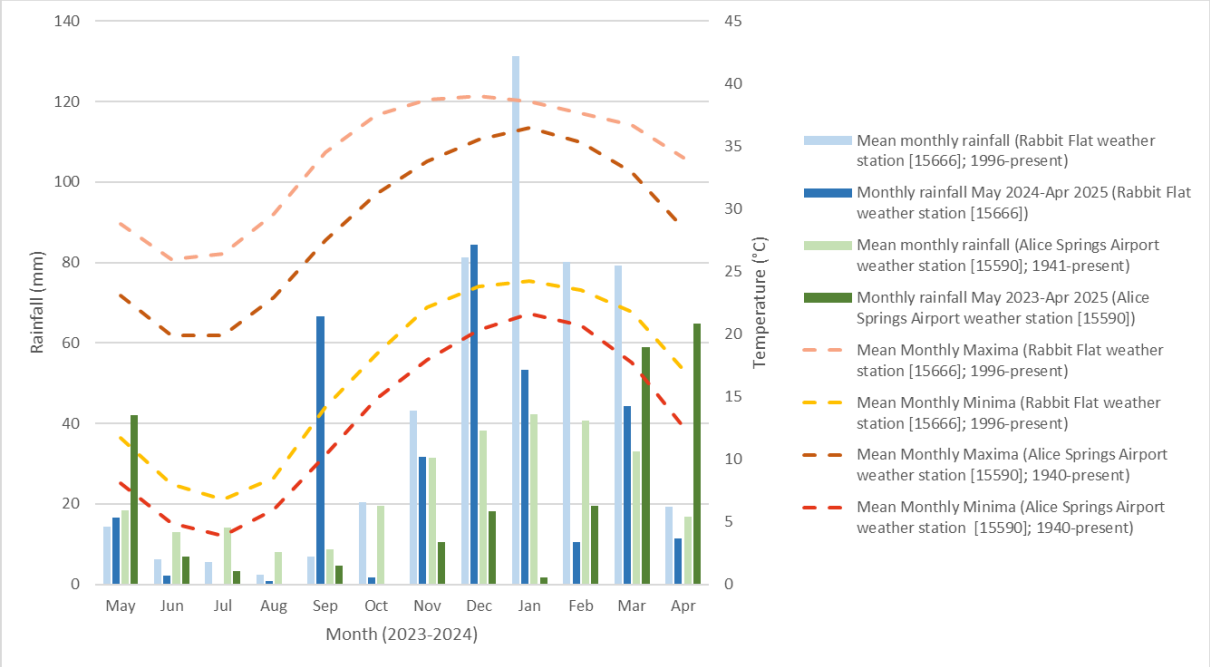


Plate 2-1: Rainfall and temperature data recorded from the Rabbit Flat (15666) and Alice Springs Airport (15590) weather stations 12 months prior to the field survey compared to the long-term average (BoM 2025)

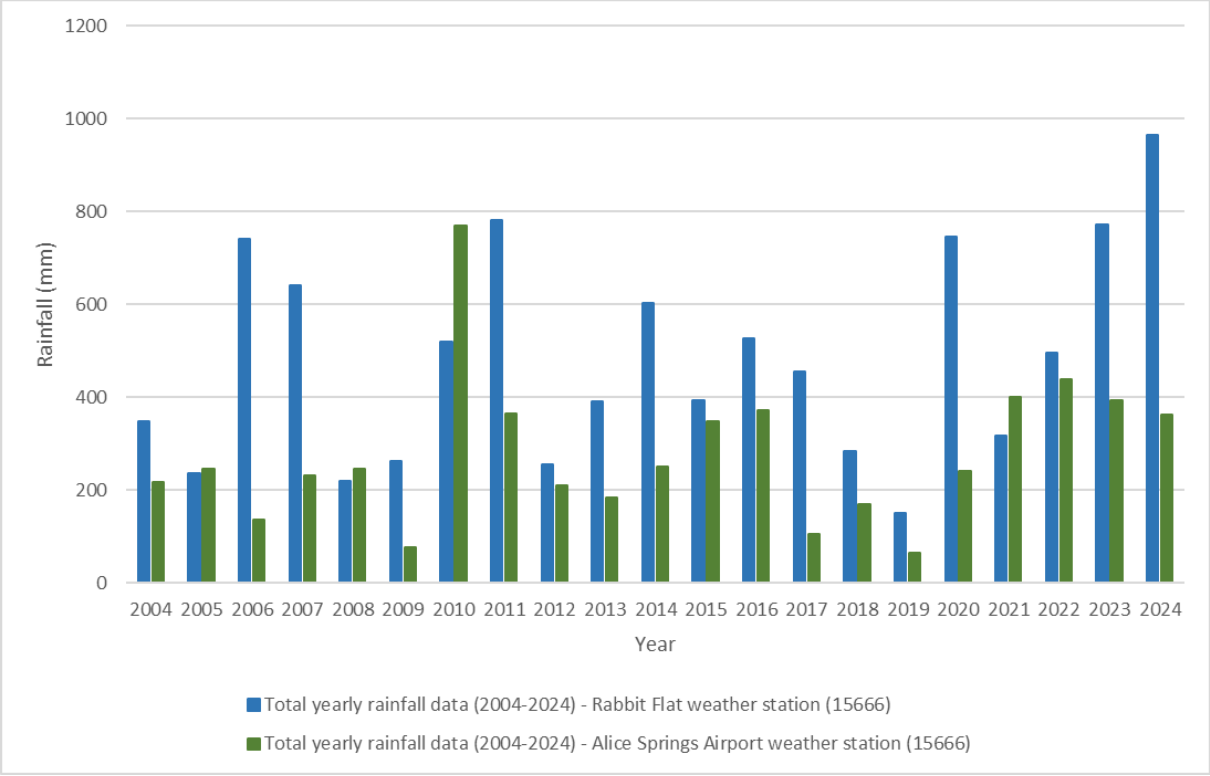


Plate 2-2: Total yearly rainfall data (2004-2024) from the Rabbit Flat (15666) and Alice Springs Airport (15590) weather stations (BoM 2025)

2.2. Regional context

2.2.1. Interim Biogeographic Regionalisation for Australia

The Interim Biogeographic Regionalisation for Australia (IBRA) Version 7 divides Australia into 89 bioregions and 419 subregions across Australia, based on a range of biotic and abiotic factors, including climate variability, vegetation, fauna, geology and landform (Thackway and Cresswell 1995). The TNP traverses three bioregions and six sub-regions, namely Burt Plain (Yuendumu [BRT01] and Atartinga [BRT02] subregions), Great Sandy Desert (Mackay [GDS02], Lake Bennett [GSD05] and Lake Lewis [GSD06] subregions) and Tanami (Tanami Desert [TAN01] subregion) bioregions.

2.2.2. Regional landscape and vegetation

The Burt Plain bioregion is characterised by plain and low rock ranges. Vegetation is predominantly mulga and other *Acacia* woodlands with short grasses and forbs, and spinifex grasslands (Bastin and the ACRIS Management Committee 2008). The Great Sandy Desert bioregion is characterised by red sand plains, dune fields and remnant rocky outcrops. Vegetation is predominantly spinifex grasslands, low woodlands and shrubs (Bastin and the ACRIS Management Committee 2008). The Tanami bioregion is characterised by featureless sand plains with small areas of alluvial plains, low ridges and stony rises. Vegetation is predominantly spinifex hummock grassland with a tall-sparse shrub overstory (Bastin and the ACRIS Management Committee 2008).

© ECO LOGICAL AUSTRALIA PTY LTD

3. Methodology

3.1. Field survey

3.1.1. Survey team and timing

The field survey was undertaken from 30 April to 5 May 2025 by Dr. Jeff Cargill (Principal Botanist) and Daniel Brassington (Senior Botanist). The survey team's relevant qualifications, experience and licences are provided below in **Table 3.1**.

Table 3.1: Survey team

Name	Qualification	Relevant experience	Relevant permits / licences
Dr. Jeff Cargill	BSc. Hons. PhD Environmental Sciences	Jeff has over 16 years' experience in botanical and ecological studies throughout WA and the NT including baseline vegetation studies (Reconnaissance and Detailed surveys), Targeted Threatened and Priority flora and fauna surveys, biological data analysis and rehabilitation and vegetation monitoring programs. Jeff completed the baseline TNP vegetation mapping in 2017, and 2020-2024 annual rehabilitation monitoring of the TNP. Jeff has also completed rehabilitation monitoring for the entire DBNGP, CS2-Tubridgi-Wheatstone Natural Gas Pipeline and the Fortescue River Gas Pipeline.	NT Parks and Wildlife permit number: 75938 CLC Permit and Authority number: P90982
Daniel Brassington	BSc. Hons. Environmental Science	Daniel has over 15 years' experience in botanical surveys and environmental services throughout Western Australia. This includes baseline vegetation studies (reconnaissance and detailed surveys), threatened and priority flora surveys, rehabilitation and vegetation monitoring, targeted species surveys, weed control, seed collection and processing, nursery operations and revegetation operations. Daniel has an extensive background in both mining and consulting, particularly in remote areas. Daniel completed the 2020 and 2021 rehabilitation monitoring of the TNP.	CLC Permit and Authority number: P90982

3.1.2. Rehabilitation monitoring

A total of 10 vegetation monitoring sites (five rehabilitation and five control quadrats; each 10 x 50 m in size) were established within the MNES habitat zone (Princess Parrot habitat) in 2020 to ensure spatial distance and replication of sites within this habitat zone. Sites were selected based on preliminary sites outlined in the *Tanami Newmont Gas Pipeline Rehabilitation Plan* (ELA 2018a), further refined in the *Pre-clearance Survey Report* (ELA 2018b). Locations of monitoring sites are provided in **Appendix B** and **Appendix C**.

Control quadrats were permanently demarcated with a steel fence dropper in the north-west corner, and wooden fence droppers in the north-east, south-east and south-west corners. Rehabilitation quadrats were not permanently demarcated with metal fence droppers, but rather demarcated with GPS coordinates and reference photos only, due to safety reasons associated with the nature and depth of the high-pressure gas pipeline.

Within each quadrat, the following information was recorded (as relevant to the completion criteria and in accordance with approved methodology outlined in the '*Northern Territory Guidelines and Field Methodology for Vegetation Survey and Mapping*' (Brocklehurst *et al*. 2007):

- Site number and quadrat type (rehabilitation or control), coordinates, time and date;
- Native flora species density (number of plants per m^2);
- Native flora species richness (per quadrat);
- Native flora species foliage cover (%);
- Weed foliage cover (%);
- Indicators of the presence of fauna (e.g. scats, burrows, tracks); and
- General observations (i.e. feral animal disturbance, fire occurrence, signs of erosion).

Photo monitoring points were completed at each vegetation monitoring site to provide a visual comparison between sites, with two photographs taken at each site: one at the northwest and one at the southeast corner of each quadrat.

3.1.3. Data analysis

Perennial native species foliage cover per 10 x 50 m quadrat were calculated for control and rehabilitation quadrats. The mean and standard error was then calculated for control and rehabilitation quadrats within each rehabilitation zone. Rehabilitation areas were then compared against controls in view of the completion criteria. Tree species, namely *Corymbia* spp. and *Eucalyptus* spp. were removed from the analysis for rehabilitation quadrats, as specified in the approved completion criteria outlined in Section 1.5. It is noted that certain *Acacia* species have the potential to grow in tree form (Mulga), and these were excluded on an individual basis where appropriate.

3.1.4. Flora nomenclature

Nomenclature for all flora species and classification categories for flora of significance follows that presented in FloraNT (Northern Territory Herbarium 2015).

3.2. Survey limitations and constraints

Constraints and limitations for the rehabilitation monitoring are summarised in **Table 3.2**. No constraints were identified.

Table 3.2: Survey limitations

Constraint	Limitation
Sources of information	**Not a constraint**: The TNP has been well surveyed, with several flora and vegetation survey reports able to be utilised for the purpose of this survey. In addition, publicly available data and information from sources such as FloraNT were accessed.
Scope of work	**Not a constraint**: The survey requirement for rehabilitation monitoring in accordance with the *Tanami Newmont Gas Pipeline Rehabilitation Plan* (ELA 2018a) and the *Northern Territory Guidelines and Field Methodology for Vegetation Survey and Mapping* (Brocklehurst *et al*. 2007) was adequately met.
Completeness of survey	**Not a constraint**: The area was surveyed to the satisfaction of the scope.
Intensity of survey	**Not a constraint**: Survey effort was considered adequate to meet the objectives of the scope. A total of 10 quadrats (five rehabilitation and five control) were established across within the MNES habitat zone (Princess Parrot habitat), with a sufficient number established per rehabilitation zone as per the *Tanami Newmont Gas Pipeline Rehabilitation Plan* (ELA 2018a).
Timing, weather, season, cycle	**Not a constraint**: The 'wet season' in the Northern Territory stretches from November to April, during which floristic material allowing plant identification is most likely to be available for most species. The field survey was undertaken in May 2025 within the recommended timing for flora surveys in this region. In the three months preceding the field survey, the TNP received above average rainfall in the north (see Section 2.1). The majority of flora species were in flower or fruit, enabling positive identification.
Disturbances	**Not a constraint**: Disturbances within the monitoring sites included the presence of weeds, disturbance from cattle activity (grazing, scats and trampling) and evidence of heat stress. These disturbances did not negatively impact the ability to meet the requirements outline in the scope of works.
Resources	**Not a constraint**: The personnel conducting this field survey were suitably qualified to identify flora specimens, having previously undertaken flora and vegetation assessments in north-eastern WA and NT.
Accessibility	**Not a constraint**: All rehabilitation sites surveyed by ELA in 2025 were able to be accessed by vehicle or on foot over the duration of the field survey.

© ECO LOGICAL AUSTRALIA PTY LTD

4. Results

4.1. Flora

A total of 129 vascular plant taxa (120 native and nine introduced) were recorded, representing 71 plant genera and 29 plant families. The majority of taxa recorded represented the Poaceae (35 taxa), Fabaceae (24 taxa), and Malvaceae (nine taxa) families. Total species richness was higher in control areas, with 100 species being recorded compared to 96 in control areas. Species lists and a species by site matrix are presented in **Appendix D** and **Appendix E**.

4.1.1. Control

A total of 100 vascular plant taxa, representing 64 plant genera and 26 plant families were recorded within the Princess Parrot habitat control zone. The majority of taxa recorded represented the Poaceae (28 taxa), Fabaceae (18 taxa), and Malvaceae (seven taxa) families. Of the vascular plant taxa recorded, six were introduced (weed) species.

4.1.2. Rehabilitation

A total of 96 vascular plant taxa, representing 57 plant genera and 22 plant families were recorded within the Princess Parrot habitat rehabilitation zone. The majority of taxa recorded represented the Poaceae (18 taxa), Fabaceae (13 taxa), and Malvaceae (seven taxa) families. Of the vascular plant taxa recorded, seven were introduced (weed) species.

4.2. Flora of significance

No Threatened or significant flora species listed under the Commonwealth EPBC Act or Northern Territory TPWCA were recorded within the vegetation monitoring sites.

4.3. Introduced (weed) species

A total of nine introduced (weed) species were recorded within the vegetation monitoring sites, namely **Bidens bipinnata*, **Cenchrus ciliaris*, **Cenchrus setiger, *Citrullus colocynthis*, **Cynodon dactylon*, **Eragrostis cylindriflora, *Eragrostis minor, *Eragrostis trichophora* and **Tribulus terrestris*. Of these, none are listed as Declared Weeds or Weeds of National Significance (WoNS) in the Northern Territory (Department of Environment and Natural Resources 2019).

Bidens bipinnata* was recorded from one rehabilitation quadrat (4) and one control quadrat (4). **Cenchrus ciliaris* was recorded from one rehabilitation quadrat (7) and one control quadrat (1). **Cenchrus setiger* was recorded from one control quadrat (1). **Citrullus colocynthis* was recorded from two rehabilitation quadrats (4 and 5). **Cynodon dactylon* was recorded from one rehabilitation quadrat (1) and one control quadrat (1). **Eragrostis cylindriflora* was recorded within one control quadrat (1). **Eragrostis minor* was recorded from one rehabilitation quadrat (4). **Eragrostis trichophora* was recorded from one rehabilitation quadrat (4) and one control quadrat (4). **Tribulus terrestris* was recorded from one rehabilitation quadrat (4). A breakdown of introduced (weed) species recorded is provided in **Appendix F.

4.4. Erosion

No significant erosion was observed within the vegetation monitoring sites.

4.5. Fulfilment of completion criteria

Results from across the five established vegetation monitoring sites were averaged for the MNES habitat zone (Princess Parrot habitat) and assessed against approved native flora species foliage cover completion criteria, outlined in the AGIG Tanami Newmont Gas Pipeline Rehabilitation Plan (ELA 2018a). The MNES habitat zone (Princess Parrot habitat) satisfied three of the four completion criteria during the 2022 monitoring period (namely native perennial flora species density, native perennial flora species richness and weed foliage cover) and, as such, these were not assessed in 2025. An overview of results is presented in **Table 4.1**.

4.5.1. MNES habitat zone (Princess Parrot habitat)

The MNES habitat zone (Princess Parrot habitat), represented by five vegetation monitoring sites (1, 4, 5, 7 and 10) did not satisfy the assessed completion criteria for native flora species foliage cover (Control: 45.24 ± 12.60; Rehabilitation: 22.06 ± 9.73; **Table 4.1**). A breakdown of each monitoring site assessed against the completion criteria is presented in **Appendix G**.

A figure showing completion criteria results per individual rehabilitation site are shown in **Appendix H**.

Table 4.1: Assessment of the MNES habitat zone (Princess Parrot habitat) assessed against each of the approved completion criteria

Rehabilitation zone	Representative sites	Native flora species density (plants per m2)	Native flora species richness (per quadrat)	Native flora species foliage cover (%)	Weed foliage cover (%)
MNES habitat zone (Princess Parrot habitat)	1, 4, 5, 7, 10	N/A	N/A	FAIL	N/A

4.6. Comparison of results against completion criteria 2020-2025

A summary of the 2025 survey results for the MNES habitat zone (Princess Parrot habitat) against 2020, 2021, 2022, 2023 and 2024 results are presented in **Table 4.2** below.

4.6.1. MNES habitat zone (Princess Parrot habitat)

Native perennial flora species foliage cover has failed to satisfy completion criteria since establishment. Values have remained at approximately 50% of the controls since 2022, with a small decrease occurring between 2023 (48.3%) and 2024 (46.7%), increasing to 48.76 in 2025.

4.7. Photo monitoring points

Photo monitoring points across 2020, 2021, 2022, 2023, 2024 and 2025 are presented in **Appendix J**.

Table 4.2: Comparison of results against MNES habitat rehabilitation zone completion criteria from 2020 to 2025

Aspect[1]	MNES habitat rehabilitation zone completion criteria	Princess Parrot habitat						
		2020	2021	2022	2023	2024	2025	2025 (Pass/Fail)
Native flora species density (% of control)	Perennial native flora species density is equal to or greater than 70% of that of the adjacent control area.	250.0	133.2	114.2	N/A	N/A	N/A	PASS
Native flora species richness (% of control)	Perennial native flora species richness is equal to or greater than 70% of that of the adjacent control area and reflects the species composition present in the pre-disturbed habitat type. Note that within 4 m either side of the pipeline, the completion criteria will only apply to ground cover species and not to tree species, which are not suitable to grow in close proximity to the pipeline. Tree species will be allowed to recover outside of the 8 m corridor.	79.7	112.3	85.7	N/A	N/A	N/A	PASS
Native flora species foliage cover (% of control)	Percentage of foliage cover of perennial native flora species indigenous to each vegetation community is equal to or greater than 70% of that of the adjacent control area and reflects the pre-disturbed habitat type. Note that within 4 m either side of the pipeline, the completion criteria will only apply to ground cover species and not to tree species, which are not suitable to grow in close proximity to the pipeline. Tree species will be allowed to recover outside of the 8 m corridor.	17.8	35.2	53.4	48.3	46.74	**48.76**	FAIL
Weed foliage cover: is rehabilitation greater than control (y/n)?	Percentage of foliage cover of Declared species under the Weeds Management Act, Weeds of National Significance (WONS) and Buffel grass (**Cenchrus ciliaris*) is not greater than that of the adjacent control area at 12 months, 24 months and 36 months.	No	No	No	N/A	N/A	N/A	PASS

[1]Results for native perennial flora species density, richness and foliage cover in rehabilitation areas (above) are presented as a total percentage of the adjacent control areas, in order to show a comparison of results, indicating the development trajectory of each rehabilitation zone.

© ECO LOGICAL AUSTRALIA PTY LTD

5. Summary and recommendations

The following summary and recommendations are specific are based on the methodology outlined in Section 3 (**Table 5.1**).

Table 5.1: Summary, changes over time and recommendations

Rehabilitation zone	Summary	Changes over time	Recommendations
MNES habitat zone (Princess Parrot habitat)	A total of 96 vascular taxa were recorded in rehabilitation quadrats (89 native and six introduced) compared to 100 in control quadrats (94 native and six introduced). The introduced (weed) species recorded were **Bidens bipinnata*, **Cenchrus ciliaris*, **Cenchrus setiger*, **Citrullus colocynthis*, **Cynodon dactylon*, **Eragrostis cylindriflora*, **Eragrostis minor*, **Eragrostis trichophora* and **Tribulus terrestris*. The MNES habitat zone (Princess parrot habitat) was only assessed against the native flora species foliage cover in 2025, and did not meet approved completion criteria: • Percentage of foliage cover of perennial native flora species indigenous to each vegetation community is equal or greater than 70% of that of the adjacent control area and reflects the pre-disturbed habitat type was not met; achieving 48.76% of control.	Rainfall has been variable since establishment (2020) and has had a noted impact on annually recorded rehabilitation values (i.e., fluctuations in recorded values depending on high or low rainfall events). Rainfall was below the long-term average in the 12 months preceding the survey. In the 3 months preceding the survey in May, rainfall was lower than average in the northern half of the TNP and greater than average in the southern half of the TNP. Between 2024 and 2025, an additional two vascular plant taxa were recorded across the rehabilitation quadrats within the MNES habitat zone (Princess Parrot habitat), while an additional seven vascular plant taxa were recorded across the control quadrats within the MNES habitat zone (Princess Parrot habitat). Native perennial flora species density, native perennial flora species richness and weed foliage cover completion criteria were met within the MNES habitat zone (Princess parrot habitat) in 2022. Native flora species foliage cover did not improve between 2023 and 2024, and has only improved slightly between 2024 and 2025, remaining at <50% of the control values.	Three completion criteria have been met (Native perennial flora species density, native perennial flora species richness and weed foliage cover) and therefore cessation of monitoring these values has been confirmed. Continue monitoring of Native flora species foliage cover in 2026 to ensure completion criteria are achieved. Consider expanding the number of sites to increase replication and spatial representation within the MNES habitat zone (Princess Parrot habitat). Consider undertaking a targeted survey to assess if Princess Parrot are utilising suitable habitat as identified in the *Tanami Newmont Gas Pipeline Rehabilitation Plan* (ELA 2018a). *Corymbia opaca* was recorded within rehabilitation monitoring quadrat 4A (1 plant, 0.2% cover, 1 metre tall) in 2025. Early intervention to remove this individual, and any other *C. opaca* individuals within the vicinity, is recommended to avoid establishment of these large, deep-rooted trees above the natural gas pipeline.

© ECO LOGICAL AUSTRALIA PTY LTD

6. References

Bastin, G. and the ACRIS Management Committee. 2008. *Rangelands 2008 — Taking the Pulse*. Published on behalf of the ACRIS Management Committee by the National Land & Water Resources Audit, Canberra.

Brocklehurst P., Lewis D., Napier D. and Lynch D. (2007) *Northern territory Guidelines and Field Methodology for Vegetation Survey and Mapping*. Technical Report No. 02/2007D. Department of Natural Resources, Environment and the Arts, Palmerston.

Bureau of Meteorology (BoM). 2025. *Climate Data Online*. Available: http://www.bom.gov.au/climate/data/. Accessed June 2025.

Eco Logical Australia (ELA). 2018a. *Tanami Newmont Gas Pipeline Rehabilitation Plan*. Prepared for AGIT

Eco Logical Australia (ELA). 2018b. *Pre-clearance Survey Report – Tanami Newmont Gas Pipeline*. Prepared for Australian Gas Infrastructure Group (AGIT)

Department of Environment and Natural Resources. 2019. *Declared Weeds in the Northern Territory*. Prepared by the Northern Territory Government [online]. Available from: https://nt.gov.au/__data/assets/pdf_file/0016/252133/declared-weeds-in-the-nt.pdf

Northern Territory Herbarium. 2015. *FloraNT Northern Territory flora online*. Available: http://eflora.nt.gov.au/home. Accessed June 2025.

Thackway, R. and Cresswell, I. D. 1995. *An interim biogeographic regionalisation for Australia: A framework for setting priorities in the national reserves system cooperative program*. Version 4.0. Australian Native Conservation Agency, Canberra.

© ECO LOGICAL AUSTRALIA PTY LTD

Appendix A Framework for conservation significant flora and fauna ranking

CATEGORIES OF THREATENED SPECIES UNDER THE ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999 (EPBC ACT)

Threatened fauna and flora may be listed in any one of the following categories as defined in Section 179 of the EPBC Act. Species listed as 'conservation dependent' and 'extinct' are not Matters of National Environmental Significance and therefore do not trigger the EPBC Act.

Category	Definition
Extinct (EX)	There is no reasonable doubt that the last member of the species has died.
Extinct in the Wild (EW)	Taxa known to survive only in captivity or as a naturalised population well outside its past range; or taxa has not been recorded in its known and/or expected habitat at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
Critically Endangered (CE)	Taxa considered to be facing an extremely high risk of extinction in the wild.
Endangered (EN)	Taxa considered to be facing a very high risk of extinction in the wild.
Vulnerable (VU)	Taxa considered to be facing a high risk of extinction in the wild.
Near Threatened (NT)	Taxa has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.
Least Concern (LC)	Taxa has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.
Data Deficient (DD)	There is inadequate information to make a direct, or indirect, assessment of taxa's risk extinction based on its distribution and/or population status.
Not Evaluated (NE)	Taxa has not yet been evaluated against the criteria.
Migratory (M)	Not an IUCN category. Species are defined as migratory if they are listed in an international agreement approved by the Commonwealth Environment Minister, including: • the Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animal) for which Australia is a range state; • the agreement between the Government of Australian and the Government of the People's Republic of China for the Protection of Migratory Birds and their environment (CAMBA); • the agreement between the Government of Japan and the Government of Australia for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment (JAMBA); or • the agreement between Australia and the Republic of Korea to develop a bilateral migratory bird agreement similar to the JAMBA and CAMBA in respect to migratory bird conservation and provides a basis for collaboration on the protection of migratory shorebirds and their habitat (ROKAMBA).

CONSERVATION CODES FOR NORTHERN TERRITORY FLORA

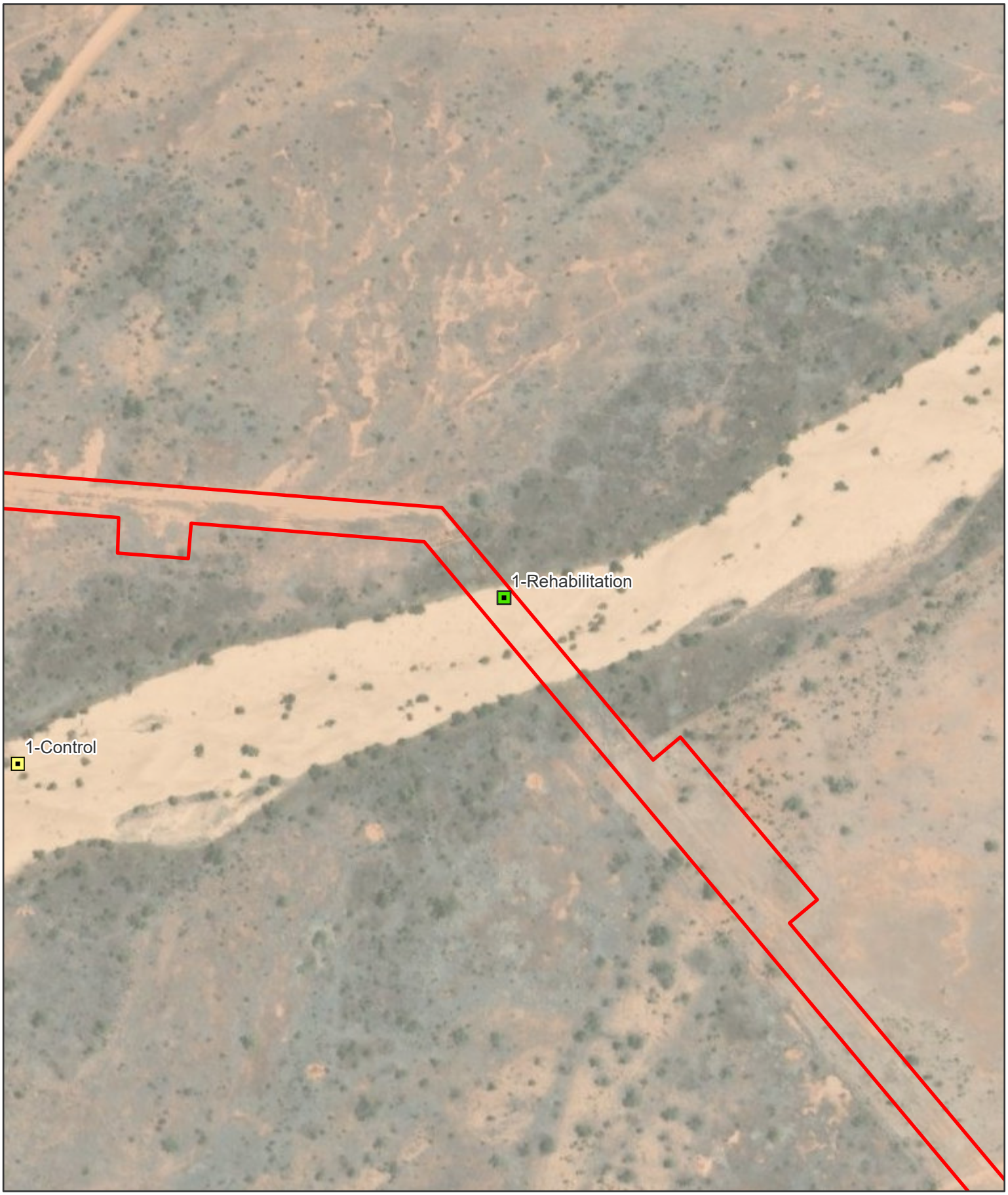
Categories for classification	Description
Extinct (EX)	A species is extinct when there is no reasonable doubt that the last individual has died. To call a species extinct, there must have been surveys carried out to look for the species across its previously known range. The survey needs to also consider the life cycle of the species and the times of year when it might be located there.
Extinct in the wild (EW)	A species is extinct in the wild when it is known only to survive in cultivation, in captivity or as a naturalised population/s outside the range they once lived in. Calling a species needs for there to have been similar surveys to those done for extinct species.
Critically endangered (CR)	A species is critically endangered when all the evidence shows that the species meets at least one of the IUCN criteria A to E for critically endangered. It is then at an extremely high risk of extinction in the wild. In cases where a species may be extinct but where not all surveys have been done to show the species absence, the species may be classified in a possibly extinct subcategory. These species are considered threatened in the NT.
Endangered (EN)	A species is endangered when all evidence shows that it meets at least one of the IUCN criteria A to E for endangered species, indicating it is facing a high risk of extinction in the wild. These species are considered threatened in the NT.
Vulnerable (VU)	A species is vulnerable when all the evidence shows that it meets at least one of the IUCN criteria A to E for vulnerable, indicating that it is facing a high risk of extinction in the wild. These species are considered threatened in the NT.
Near threatened (NT)	A species is near threatened when it is not classified in one of the above threatened categories, but it is close to being or is likely to be in a threatened category soon.
Least concern (LC)	A species is least concern when there is sufficient information available to make an assessment and it is not classified as critically endangered, endangered, vulnerable or near threatened. Species that are widespread with high numbers are in this category.
Data deficient (DD)	A species is data deficient when there is not enough information to make a direct, or indirect, assessment of its risk of extinction based on distribution and/or population. Data deficient is not a category of threatened species, but data deficient species should not be assumed to be safe. A species in this category may be well studied and well known but there is not enough specific data on numbers and distribution. Species in this category need more information and future research will probably show that they need to be classified as threatened.
Not evaluated (NE)	A species is not evaluated when it is has not been assessed against the criteria. This may be because the species is a rare visitor to the Territory or that the taxonomy of the species has recently changed or is unclear.
Infraspecific (INFRA)	A species which has more than one subspecies, one of which may be listed as a conservation listed species.

Appendix B GPS location coordinates of monitoring sites

Vegetation monitoring site	Quadrat type	Easting	Northing
1	Rehabilitation	254339	7476152
	Control	254001	7476021
4	Rehabilitation	747488	7551363
	Control	747548	7551385
5	Rehabilitation	726210	7586380
	Control	726306	7586432
7	Rehabilitation	706317	7619580
	Control	706202	7619558
10	Rehabilitation	655957	7707562
	Control	656048	7707614

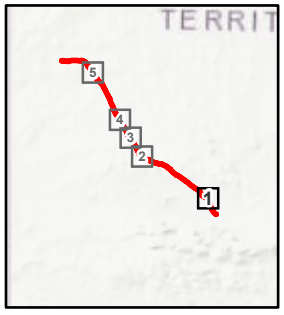
© ECO LOGICAL AUSTRALIA PTY LTD

Appendix C Vegetation monitoring site location



Vegetation Monitoring Site (Map 1 of 5)

- Tanami Newmont Gas Pipeline
- Control
- Rehabilitation



0 25 50 100
Metres

Datum/Projection:
GDA 1994 MGA Zone 52

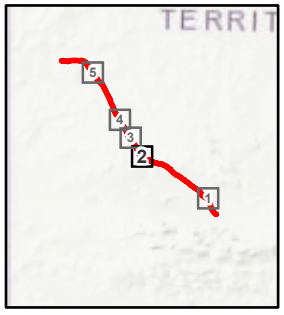
24PER8044-JP Date: 6/13/2025

N

eco logical AUSTRALIA
A TETRA TECH COMPANY

Vegetation Monitoring Site (Map 2 of 5)

- Tanami Newmont Gas Pipeline
- Control
- Rehabilitation



0 25 50 100
Metres

Datum/Projection:
GDA 1994 MGA Zone 52

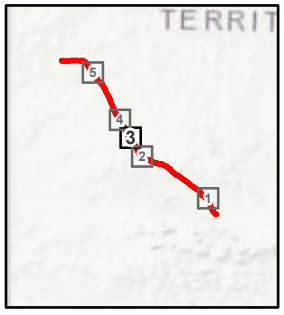
24PER8044-JP Date: 6/13/2025

N

eco logical AUSTRALIA
A TETRA TECH COMPANY

Vegetation Monitoring Site (Map 3 of 5)

- Tanami Newmont Gas Pipeline
- Control
- Rehabilitation



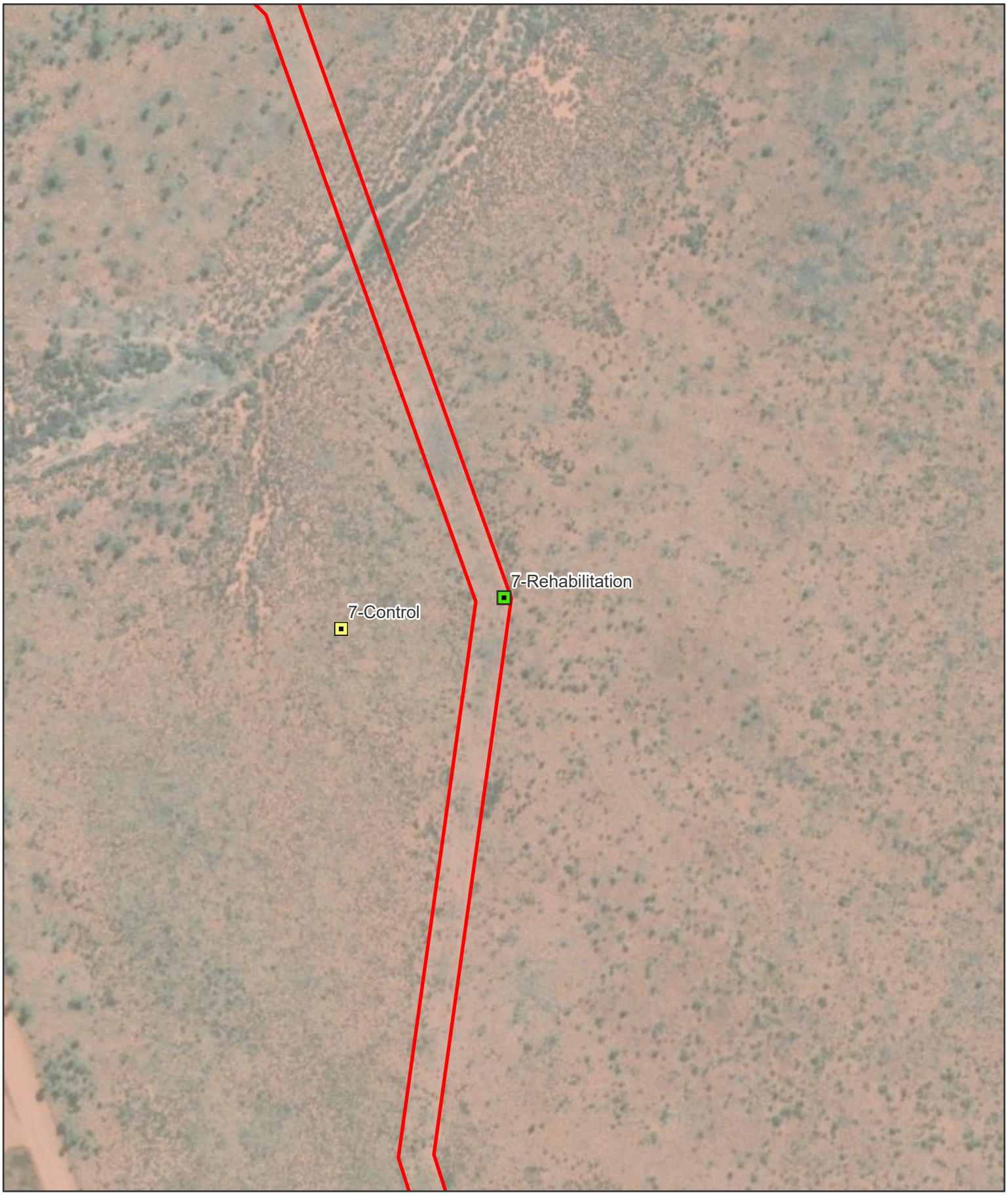
0 25 50 100
Metres

Datum/Projection:
GDA 1994 MGA Zone 52

24PER8044-JP Date: 6/13/2025

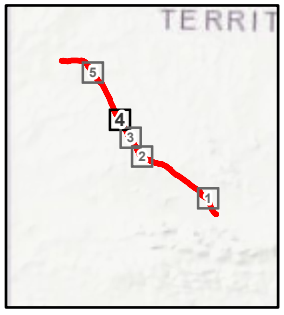
N

eco logical AUSTRALIA
A TETRA TECH COMPANY



Vegetation Monitoring Site (Map 4 of 5)

- Tanami Newmont Gas Pipeline
- Control
- Rehabilitation



0 25 50 100
Metres

Datum/Projection:
GDA 1994 MGA Zone 52

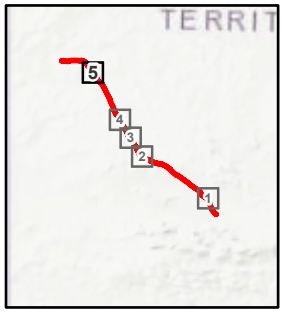
24PER8044-JP Date: 6/13/2025

N

eco logical AUSTRALIA
A TETRA TECH COMPANY

Vegetation Monitoring Site (Map 5 of 5)

- Tanami Newmont Gas Pipeline
- Control
- Rehabilitation



0 25 50 100
Metres

Datum/Projection:
GDA 1994 MGA Zone 52

24PER8044-JP Date: 6/13/2025

N

eco logical AUSTRALIA
A TETRA TECH COMPANY

Appendix D Flora species list

Family	Species	Control	Rehabilitation
Amaranthaceae	*Alternanthera angustifolia*		X
Amaranthaceae	*Alternanthera nana*	X	
Amaranthaceae	*Gomphrena lanata*	X	X
Amaranthaceae	*Ptilotus obovatus*	X	
Apocynaceae	*Vincetoxicum lineare*	X	
Asteraceae	**Bidens bipinnata*	X	X
Asteraceae	*Pluchea dunlopii*	X	X
Asteraceae	*Pluchea ferdinandi-muelleri*	X	X
Asteraceae	*Pterocaulon* sp.	X	X
Asteraceae	*Pterocaulon sphacelatum*	X	
Boraginaceae	*Euploca tanythrix*	X	
Campanulaceae	*Wahlenbergia tumidifructa*		X
Caryophyllaceae	*Polycarpaea corymbosa*		X
Chenopodiaceae	*Dysphania melanocarpa*		X
Chenopodiaceae	*Sclerolaena convexula*	X	
Chenopodiaceae	*Sclerolaena cornishiana*	X	X
Chenopodiaceae	*Sclerolaena deserticola*		X
Cleomaceae	*Arivela viscosa*	X	X
Convolvulaceae	*Bonamia deserticola*	X	X
Convolvulaceae	*Bonamia media*	X	X
Convolvulaceae	*Evolvulus alsinoides* var. *decumbens*	X	X
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*	X	X
Convolvulaceae	*Ipomoea costata*		X
Convolvulaceae	*Ipomoea muelleri*		X
Convolvulaceae	*Ipomoea* sp.	X	
Cucurbitaceae	**Citrullus colocynthis*		X
Cyperaceae	*Bulbostylis barbata*	X	X
Cyperaceae	*Cyperus iria*	X	X
Cyperaceae	*Cyperus vaginatus*	X	
Cyperaceae	*Fimbristylis dichotoma*	X	X
Cyperaceae	*Fimbristylis eremophila*	X	
Euphorbiaceae	*Euphorbia biconvexa*	X	X
Euphorbiaceae	*Euphorbia ferdinandi*	X	X
Euphorbiaceae	*Euphorbia ferdinandi* var. *ferdinandi*		X
Euphorbiaceae	*Euphorbia papillata*		X
Euphorbiaceae	*Euphorbia papillata* var. *papillata*	X	
Euphorbiaceae	*Euphorbia tannensis*	X	X
Fabaceae	*Acacia adsurgens*	X	X
Fabaceae	*Acacia aptaneura*	X	X
Fabaceae	*Acacia colei*	X	X

© ECO LOGICAL AUSTRALIA PTY LTD

Family	Species	Control	Rehabilitation
Fabaceae	*Acacia elachantha*		X
Fabaceae	*Acacia kempeana*	X	
Fabaceae	*Acacia melleodora*	X	X
Fabaceae	*Acacia pruinocarpa*		X
Fabaceae	*Acacia sericophylla*	X	X
Fabaceae	*Acacia* sp.	X	
Fabaceae	*Acacia tenuissima*		X
Fabaceae	*Glycine canescens*	X	X
Fabaceae	*Indigofera colutea*	X	X
Fabaceae	*Indigofera linifolia*	X	X
Fabaceae	*Indigofera linnaei*		X
Fabaceae	*Muelleranthus stipularis*	X	
Fabaceae	*Rhynchosia minima*		X
Fabaceae	*Senna artemisioides* (DC.) Randell subsp. *×artemisioides*		X
Fabaceae	*Senna artemisioides* subsp. *helmsii*	X	X
Fabaceae	*Senna artemisioides* subsp. *oligophylla*	X	X
Fabaceae	*Senna notabilis*	X	
Fabaceae	*Tephrosia* sp. D Kimberley Flora (R.D.Royce 1848)	X	X
Fabaceae	*Tephrosia supina*	X	X
Fabaceae	*Vigna sp.*	X	
Fabaceae	*Zornia albiflora*	X	X
Goodeniaceae	*Goodenia armitiana*	X	
Goodeniaceae	*Goodenia hirsuta*	X	X
Goodeniaceae	*Scaevola parvifolia* subsp. *parvifolia*	X	X
Lauraceae	*Cassytha capillaris*	X	X
Malvaceae	*Abutilon macrum*	X	X
Malvaceae	*Abutilon otocarpum*	X	X
Malvaceae	*Androcalva loxophylla*	X	X
Malvaceae	*Gossypium australe*	X	X
Malvaceae	*Hibiscus burtonii*	X	X
Malvaceae	*Sida cardiophylla*	X	X
Malvaceae	*Sida fibulifera*	X	X
Malvaceae	*Sida sp.*		X
Malvaceae	*Sida* sp. Pindan (B.G. Thomson 3398)		X
Myrtaceae	*Corymbia opaca*		X
Myrtaceae	*Eucalyptus camaldulensis*		X
Myrtaceae	*Eucalyptus camaldulensis* subsp. *arida*	X	
Myrtaceae	*Melaleuca glomerata*	X	X
Myrtaceae	*Melaleuca lasiandra*	X	X
Nyctaginaceae	*Boerhavia coccinea*	X	X
Phyllanthaceae	*Dendrophyllanthus erwinii*	X	X
Poaceae	**Cenchrus ciliaris*	X	X

© ECO LOGICAL AUSTRALIA PTY LTD

Family	Species	Control	Rehabilitation
Poaceae	**Cenchrus setiger*	X	
Poaceae	**Cynodon dactylon*	X	X
Poaceae	**Eragrostis cylindriflora*	X	
Poaceae	**Eragrostis minor*		X
Poaceae	**Eragrostis trichophora*	X	X
Poaceae	*Aristida contorta*	X	X
Poaceae	*Aristida holathera*	X	X
Poaceae	*Aristida holathera* var. *holathera*		X
Poaceae	*Aristida latifolia*	X	X
Poaceae	*Chrysopogon fallax*	X	
Poaceae	*Dactyloctenium radulans*	X	X
Poaceae	*Digitaria brownii*	X	X
Poaceae	*Digitaria ctenantha*	X	X
Poaceae	*Enneapogon cylindricus*	X	X
Poaceae	*Eragrostis cumingii*	X	X
Poaceae	*Eragrostis eriopoda*		X
Poaceae	*Eragrostis eriopoda* subsp. Sandy fireweed (P.K Latz 12908)	X	
Poaceae	*Eragrostis leptocarpa*		X
Poaceae	*Eragrostis speciosa*	X	X
Poaceae	*Eriachne aristidea*	X	X
Poaceae	*Eriachne helmsii*	X	
Poaceae	*Eriachne pulchella* subsp. *dominii*		X
Poaceae	*Eulalia aurea*	X	
Poaceae	*Panicum australiense*	X	
Poaceae	*Panicum laevinode*	X	
Poaceae	*Paspalidium rarum*	X	X
Poaceae	*Paspalidium reflexum*		X
Poaceae	*Perotis rara*	X	X
Poaceae	*Sporobolus australasicus*	X	
Poaceae	*Sporobolus blakei*	X	X
Poaceae	*Themeda triandra*		X
Poaceae	*Tragus australianus*	X	X
Poaceae	*Triodia pungens*	X	X
Poaceae	*Triodia schinzii*	X	
Portulacaceae	*Portulaca filifolia*	X	X
Proteaceae	*Grevillea wickhamii* subsp. *aprica*	X	
Proteaceae	*Hakea chordophylla*	X	
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*	X	
Rubiaceae	*Dentella asperata*	X	X
Rubiaceae	*Synaptantha tillaeacea*	X	X
Santalaceae	*Santalum lanceolatum*	X	
Scrophulariaceae	*Eremophila latrobei* subsp. *glabra*	X	

© ECO LOGICAL AUSTRALIA PTY LTD

Family	Species	Control	Rehabilitation
Solanaceae	*Solanum centrale*	X	X
Solanaceae	*Solanum quadriloculatum*		X
Surianaceae	*Stylobasium spathulatum*	X	
Zygophyllaceae	**Tribulus terrestris*		X
Zygophyllaceae	*Tribulus astrocarpus*	X	X

Appendix E Species by site matrix

Family	Species	1A	1B	4A	4B	5A	5B	7A	7B	10A	10B
Amaranthaceae	*Alternanthera angustifolia*					X					
Amaranthaceae	*Alternanthera nana*				X						
Amaranthaceae	*Gomphrena lanata*			X	X						
Amaranthaceae	*Ptilotus obovatus*						X				
Apocynaceae	*Vincetoxicum lineare*				X						
Asteraceae	**Bidens bipinnata*			X	X						
Asteraceae	*Pluchea dunlopii*					X	X				
Asteraceae	*Pluchea ferdinandi-muelleri*							X	X		
Asteraceae	*Pterocaulon* sp.			X	X						
Asteraceae	*Pterocaulon sphacelatum*						X		X		
Boraginaceae	*Euploca tanythrix*				X						
Campanulaceae	*Wahlenbergia tumidifructa*	X									
Caryophyllaceae	*Polycarpaea corymbosa*					X					
Chenopodiaceae	*Dysphania melanocarpa*			X							
Chenopodiaceae	*Sclerolaena convexula*				X						
Chenopodiaceae	*Sclerolaena cornishiana*			X	X						
Chenopodiaceae	*Sclerolaena deserticola*			X							
Cleomaceae	*Arivela viscosa*			X	X	X	X				
Convolvulaceae	*Bonamia deserticola*							X	X		
Convolvulaceae	*Bonamia media*						X			X	X
Convolvulaceae	*Evolvulus alsinoides* var. *decumbens*							X	X		
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*			X	X	X	X	X			
Convolvulaceae	*Ipomoea costata*					X					
Convolvulaceae	*Ipomoea muelleri*			X		X					
Convolvulaceae	*Ipomoea* sp.				X						
Cucurbitaceae	**Citrullus colocynthis*			X		X					
Cyperaceae	*Bulbostylis barbata*				X	X	X				
Cyperaceae	*Cyperus iria*					X	X				

© ECO LOGICAL AUSTRALIA PTY LTD

Family	Species	1A	1B	4A	4B	5A	5B	7A	7B	10A	10B
Cyperaceae	*Cyperus vaginatus*		X								
Cyperaceae	*Fimbristylis dichotoma*			X	X	X	X				
Cyperaceae	*Fimbristylis eremophila*								X		
Euphorbiaceae	*Euphorbia biconvexa*			X	X						
Euphorbiaceae	*Euphorbia ferdinandi*				X			X			
Euphorbiaceae	*Euphorbia ferdinandi* var. *ferdinandi*			X							
Euphorbiaceae	*Euphorbia papillata*					X					
Euphorbiaceae	*Euphorbia papillata* var. *papillata*						X				
Euphorbiaceae	*Euphorbia tannensis*			X	X	X	X				
Fabaceae	*Acacia adsurgens*					X	X	X			
Fabaceae	*Acacia aptaneura*			X	X						
Fabaceae	*Acacia colei*	X	X								
Fabaceae	*Acacia elachantha*							X			
Fabaceae	*Acacia kempeana*				X						
Fabaceae	*Acacia melleodora*							X	X	X	X
Fabaceae	*Acacia pruinocarpa*			X		X					
Fabaceae	*Acacia sericophylla*									X	X
Fabaceae	*Acacia sp.*		X								
Fabaceae	*Acacia tenuissima*					X		X			
Fabaceae	*Glycine canescens*			X	X						
Fabaceae	*Indigofera colutea*					X	X				
Fabaceae	*Indigofera linifolia*			X	X	X	X				
Fabaceae	*Indigofera linnaei*			X		X					
Fabaceae	*Muelleranthus stipularis*						X				
Fabaceae	*Rhynchosia minima*							X			
Fabaceae	*Senna artemisioides* (DC.) Randell subsp. ×artemisioides			X							
Fabaceae	*Senna artemisioides* subsp. *helmsii*			X	X	X					
Fabaceae	*Senna artemisioides* subsp. *oligophylla*			X		X	X				
Fabaceae	*Senna notabilis*										X
Fabaceae	*Tephrosia* sp. D Kimberley Flora (R.D.Royce 1848)							X	X	X	X

© ECO LOGICAL AUSTRALIA PTY LTD

Family	Species	1A	1B	4A	4B	5A	5B	7A	7B	10A	10B
Fabaceae	*Tephrosia supina*					X	X				
Fabaceae	*Vigna* sp.		X								
Fabaceae	*Zornia albiflora*					X	X	X	X		
Goodeniaceae	*Goodenia armitiana*						X				
Goodeniaceae	*Goodenia hirsuta*				X	X	X				
Goodeniaceae	*Scaevola parvifolia* subsp. *parvifolia*									X	X
Lauraceae	*Cassytha capillaris*							X	X		
Malvaceae	*Abutilon macrum*			X	X						
Malvaceae	*Abutilon otocarpum*				X	X	X				
Malvaceae	*Androcalva loxophylla*									X	X
Malvaceae	*Gossypium australe*			X		X	X				
Malvaceae	*Hibiscus burtonii*				X					X	
Malvaceae	*Sida cardiophylla*				X			X			
Malvaceae	*Sida fibulifera*			X	X						
Malvaceae	*Sida* sp.									X	
Malvaceae	*Sida* sp. Pindan (B.G. Thomson 3398)							X			
Myrtaceae	*Corymbia opaca*			X							
Myrtaceae	*Eucalyptus camaldulensis*	X									
Myrtaceae	*Eucalyptus camaldulensis* subsp. *arida*		X								
Myrtaceae	*Melaleuca glomerata*							X	X		
Myrtaceae	*Melaleuca lasiandra*							X	X		
Nyctaginaceae	*Boerhavia coccinea*					X	X				X
Phyllanthaceae	*Dendrophyllanthus erwinii*			X	X		X				
Poaceae	**Cenchrus ciliaris*		X					X			
Poaceae	**Cenchrus setiger*		X								
Poaceae	**Cynodon dactylon*	X	X								
Poaceae	**Eragrostis cylindriflora*		X								
Poaceae	**Eragrostis minor*			X							
Poaceae	**Eragrostis trichophora*			X	X						
Poaceae	*Aristida contorta*			X	X						

© ECO LOGICAL AUSTRALIA PTY LTD

Family	Species	1A	1B	4A	4B	5A	5B	7A	7B	10A	10B
Poaceae	*Aristida holathera*	X							X		X
Poaceae	*Aristida holathera* var. *holathera*							X		X	
Poaceae	*Aristida latifolia*					X	X				
Poaceae	*Chrysopogon fallax*				X						
Poaceae	*Dactyloctenium radulans*			X	X	X					
Poaceae	*Digitaria brownii*			X	X						
Poaceae	*Digitaria ctenantha*			X	X						
Poaceae	*Enneapogon cylindricus*			X	X						
Poaceae	*Eragrostis cumingii*				X	X					
Poaceae	*Eragrostis eriopoda*					X		X		X	
Poaceae	*Eragrostis eriopoda* subsp. Sandy fireweed (P.K Latz 12908)										X
Poaceae	*Eragrostis leptocarpa*					X					
Poaceae	*Eragrostis speciosa*	X	X								
Poaceae	*Eriachne aristidea*				X	X				X	X
Poaceae	*Eriachne helmsii*										X
Poaceae	*Eriachne pulchella* subsp. *dominii*			X							
Poaceae	*Eulalia aurea*		X		X						
Poaceae	*Panicum australiense*								X		X
Poaceae	*Panicum laevinode*				X						
Poaceae	*Paspalidium rarum*				X	X	X				
Poaceae	*Paspalidium reflexum*			X							
Poaceae	*Perotis rara*			X	X	X					
Poaceae	*Sporobolus australasicus*						X				
Poaceae	*Sporobolus blakei*			X	X						
Poaceae	*Themeda triandra*			X							
Poaceae	*Tragus australianus*			X	X						
Poaceae	*Triodia pungens*					X	X	X	X	X	X
Poaceae	*Triodia schinzii*										X
Portulacaceae	*Portulaca filifolia*					X			X		
Proteaceae	*Grevillea wickhamii* subsp. *aprica*										X

© ECO LOGICAL AUSTRALIA PTY LTD

Family	Species	1A	1B	4A	4B	5A	5B	7A	7B	10A	10B
Proteaceae	*Hakea chordophylla*						X				
Pteridaceae	*Cheilanthes sieberi* subsp. *sieberi*				X						
Rubiaceae	*Dentella asperata*					X			X		
Rubiaceae	*Synaptantha tillaeacea*	X	X								
Santalaceae	*Santalum lanceolatum*								X		
Scrophulariaceae	*Eremophila latrobei* subsp. *glabra*				X						
Solanaceae	*Solanum centrale*			X		X	X				X
Solanaceae	*Solanum quadriloculatum*			X							
Surianaceae	*Stylobasium spathulatum*				X						
Zygophyllaceae	**Tribulus terrestris*			X							
Zygophyllaceae	*Tribulus astrocarpus*			X	X						

Appendix F Summary of introduced (weed) species recorded across the TNP

Species	WoNS or Declared Pest?	Monitoring site	Quadrat type	# of plants
**Bidens bipinnata*	No	4	Rehabilitation	10
**Bidens bipinnata*	No	4	Control	9
**Cenchrus ciliaris*	No	1	Control	8
**Cenchrus ciliaris*	No	7	Rehabilitation	1
**Cenchrus setiger*	No	1	Control	1
**Citrullus colocynthis*	No	4	Rehabilitation	1
**Citrullus colocynthis*	No	5	Rehabilitation	1
**Cynodon dactylon*	No	1	Rehabilitation	20
**Cynodon dactylon*	No	1	Control	20
**Eragrostis cylindriflora*	No	1	Control	5
**Eragrostis minor*	No	4	Rehabilitation	500
**Eragrostis trichophora*	No	4	Rehabilitation	105
**Eragrostis trichophora*	No	4	Control	125
**Tribulus terrestris*	No	4	Rehabilitation	1

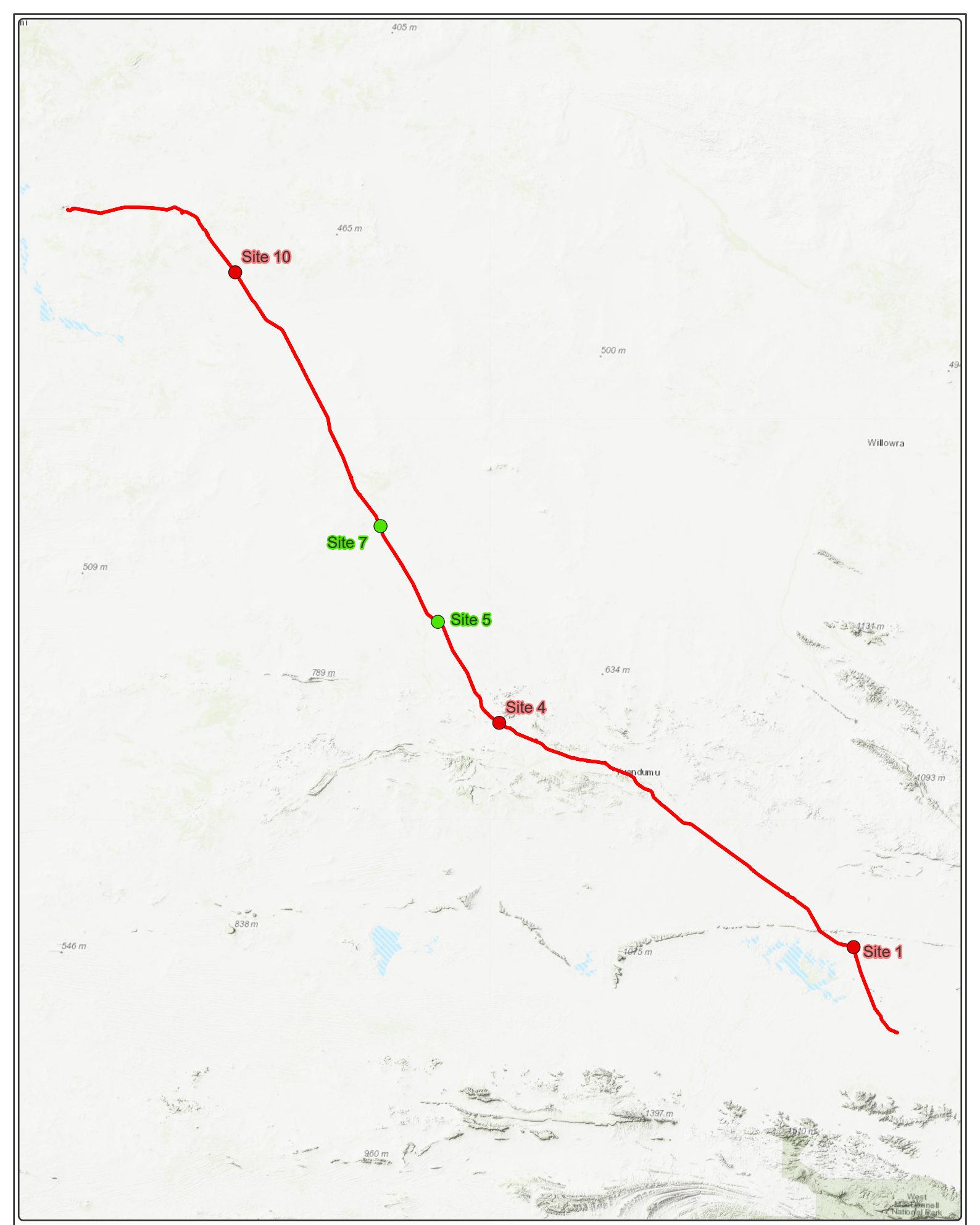
Note: Completion criteria states percentage of foliage cover of Declared species under the Weeds Management Act, Weeds of National Significance (WONS) and Buffel grass (**Cenchrus ciliaris*).

Appendix G Assessment of individual monitoring sites within the TNP against minimum standards outlined in approved completion criteria (AGIG *Tanami Newmont Gas Pipeline Rehabilitation Plan*; ELA 2018a)

Monitoring site	Hectares (ha)	Rehabilitation zone	Native flora species foliage cover (%)		
			Control	Rehabilitation	Pass (y/n)
1	Control quadrat: 0.1 Rehabilitation quadrat: 0.1 Monitoring site total: 0.2	MNES habitat zone (Princess Parrot habitat)	6.67	0.61	n
4	Control quadrat: 0.1 Rehabilitation quadrat: 0.1 Monitoring site total: 0.2	MNES habitat zone (Princess Parrot habitat)	43.87	16.94	n
5	Control quadrat: 0.1 Rehabilitation quadrat: 0.1 Monitoring site total: 0.2	MNES habitat zone (Princess Parrot habitat)	30.9	34	y
7	Control quadrat: 0.1 Rehabilitation quadrat: 0.1 Monitoring site total: 0.2	MNES habitat zone (Princess Parrot habitat)	73.97	53.43	y
10	Control quadrat: 0.1 Rehabilitation quadrat: 0.1 Monitoring site total: 0.2	MNES habitat zone (Princess Parrot habitat)	70.78	5.32	n

© ECO LOGICAL AUSTRALIA PTY LTD

Appendix H Native flora species foliage cover (%) result per individual rehabilitation site



Native flora species foliage cover - MNES habitat zone (Princess Parrot habitat)

Tanami Newmont Gas Pipeline

Pass

Fail

N

0 30 60

Kilometres

Datum/Projection:
GDA 1994 MGA Zone 52

24PER9249-DH Date: 6/10/2025

ecological AUSTRALIA
A TETRA TECH COMPANY

Appendix I Photo monitoring points 2020-2025

Monitoring site 1

2020				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2021				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2022				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**

© ECO LOGICAL AUSTRALIA PTY LTD

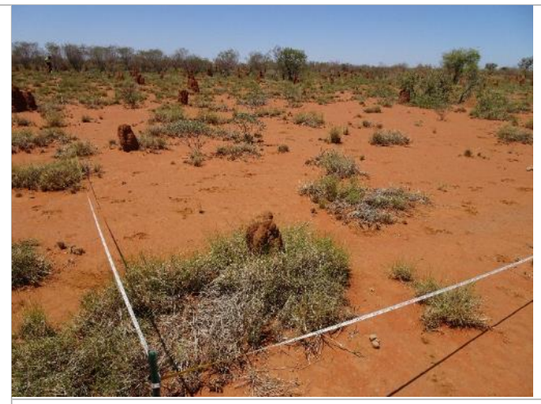
2023				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2024				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2025				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**

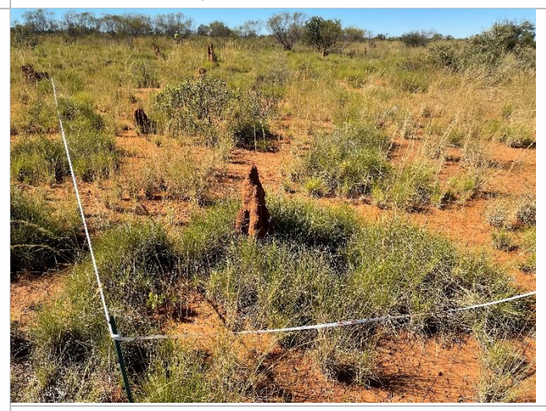
Monitoring site 4

2020				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2021				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2022				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**

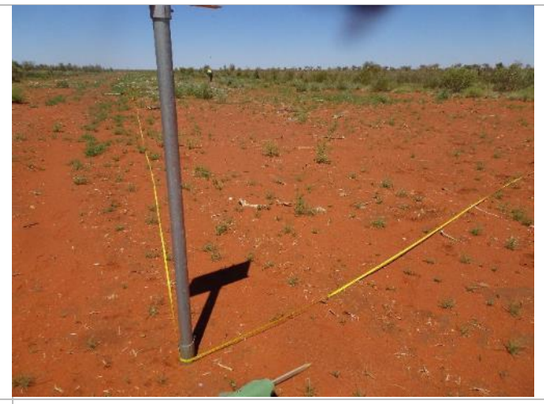
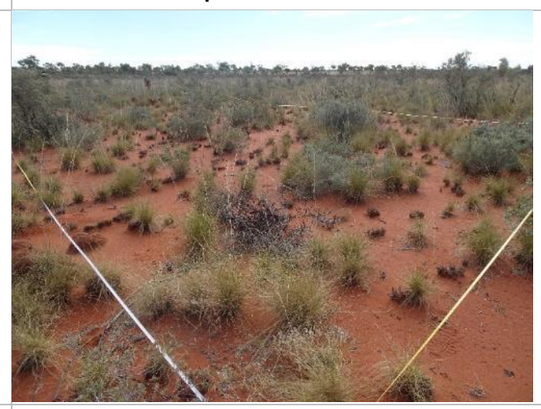
2023				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2024				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2025				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**

Monitoring site 5

2020				
	Control – photo from the northwest	Control – photo from the southeast	Rehabilitation – photo from the northwest	Rehabilitation – photo from the southeast
2021				
	Control – photo from the northwest	Control – photo from the southeast	Rehabilitation – photo from the northwest	Rehabilitation – photo from the southeast
2022				
	Control – photo from the northwest	Control – photo from the southeast	Rehabilitation – photo from the northwest	Rehabilitation – photo from the southeast

2023				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2024				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2025				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**

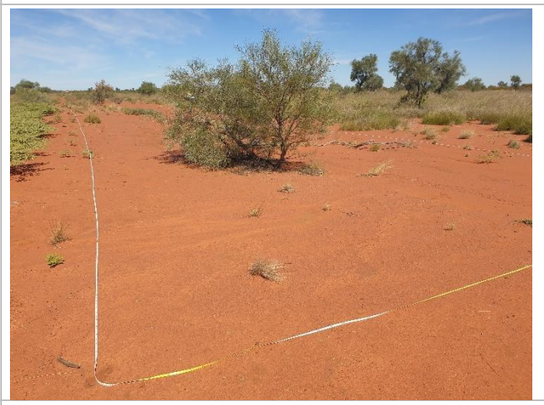
Monitoring site 7

2020				
	Control – photo from the northwest	Control – photo from the southeast	Rehabilitation – photo from the northwest	Rehabilitation – photo from the southeast
2021				
	Control – photo from the northwest	Control – photo from the southeast	Rehabilitation – photo from the northwest	Rehabilitation – photo from the southeast
2022				
	Control – photo from the northwest	Control – photo from the southeast	Rehabilitation – photo from the northwest	Rehabilitation – photo from the southeast

2023				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2024				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2025				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**

Monitoring site 10

2020				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2021				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2022				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**

2023				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2024				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**
2025				
	Control – photo from the northwest	**Control – photo from the southeast**	**Rehabilitation – photo from the northwest**	**Rehabilitation – photo from the southeast**

ecological AUSTRALIA
A TETRA TECH COMPANY

1300 646 131
www.ecoaus.com.au