21st January 2026

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Energy, Resources and Industry Assessments
Department of Planning, Housing and Infrastructure – NSW Planning Group

RFI-102835706: Response to Request for Information - Assessment of Serious and Irreversible Impacts

Copi Mineral Sands Project: SSD-41294067

Dear Mandana,

Thank you for your correspondence dated 24th December 2025, providing the Request for Information from the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) – Department of Planning, Housing and Infrastructure (DPHI).

This letter addresses additional information collected regarding surveys for the assessment of Serious and Irreversible Impacts (SAII) entity *Austrostipa nullanulla*, which will be directly impacted by the project, providing additional information and clarifications related to the Biodiversity Development Assessment Report (BDAR). Following the recent resubmission of the amended Biodiversity Offset Assessment Management System (BOAMS) parent and child cases and the revised BDAR, Biodiversity Australia (BA) have prepared the addendum to Section 5.6 Assessment of Serious and Irreversible Impacts (SAII) of the BDAR below, along with Dr John Hunter's recently finalised *Austrostipa nullanulla* survey report and associated shapefiles. The targeted *Austrostipa nullanulla* survey and report were conducted by BA in response to the severely limited literature available for the species in broadly and in particular, within NSW. In addition to previous NSW literature and Dr Hunter's survey report, the addendum also relies on literature produced in South Australia and Victoria.

Our approach remains focused on fulfilling the proponents' statutory obligations under the *Biodiversity Conservation Act 2016*, the *Biodiversity Conservation Regulation 2017* and the Biodiversity Assessment Method 2020.

We trust that the details provided herein will support DPHI's review and demonstrate our adherence to the required standards. Should any further clarification be needed, please do not hesitate to contact the undersigned at 0410 522 399 or via email at karl.robertson@biodiversityaust.com.au.

Yours faithfully,

Karl Robertson
BAM Accredited Assessor BAAS21022
Principal Consultant and Senior Business Manager

A-1 Addendum (to Copi BDAR Rev 5.0)

5.6 Assessment of Serious and Irreversible Impacts (SAII)

5.6.1 Identification of SAII Entities

Section 6.5 of the BC Act requires developments to consider SAII on threatened species and ecological communities which meet one or more of the following criteria:

- Principle 1 - Evidence of rapid rate of decline (clause 6.7(2)(a) BC Regulation),
- Principle 2 - Evidence of small population size (clause 6.7(2)(b) BC Regulation),
- Principle 3 - Evidence of limited geographic distribution (clause 6.7(2)(c) BC Regulation), and/or
- Principle 4 - Evidence that the entity is unlikely to respond to management (clause 6.7(2)(d) BC Regulation).

One SAII entity was recorded on the Subject Land; *Austrostipa nullanulla* (Nulla grass, a spear grass). It has been stated, that *A. nullanulla* meets SAII criteria under one (1) of the four (4) principles, Principle 3, and is thus identified as an entity at risk of an SAII. Application of Principle 3 is required where there are impacts that impact on the habitat of a species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution.

The SAII Principle 3 generally applies to entities that are listed as Critically Endangered under the BC Act, where the reason for being listed as Critically Endangered is the entities very restricted geographic distribution. This is reflective of *A. nullanulla,* which is listed as an Endangered species under the BC Act.

Species listed as Critically Endangered under the BC Act are considered to have very limited geographic distribution and are generally known to:

- Have an area of occupancy (sensu IUCN 2017) of ≤10 km2,
- Have an extent of occurrence (sensu IUCN 2017) of ≤100 km2,
- Have at least two of the following three conditions:
    - Are severely fragmented or only known from one location,
    - Continuing decline, &
    - Extreme fluctuations.
- Inhabit less than or equal to three locations in New South Wales (SAII 2019)

During Biodiversity Australia's surveys *A. nullanulla* and suitable habitat was found to occupy an area of 59.59 ha within the Development Footprint – Mine Site (Figure 1, BDAR Figure 83).

The Species Polygon is in accordance with Section 5.2.5 of the BAM and focuses on statutory obligations without extending beyond the method's scope. The Species Polygon covers the full extent of suitable habitat, defined by the TBDC habitat constraint of "*gypsum derived soils associated with salt lakes*," regardless of plant presence detection during surveys.

Suitable habitat was identified and mapped through a combination of field-verified potential habitat surveys (conducted in November 2025), satellite imagery (e.g., from sources like Google and NSW Spatial Services), and high-resolution aerial imagery. For the associated PCT 253 (Gypseous shrubland on rises in the semi-arid and arid plains), the Species Polygon now encompasses the full extent of suitable exposed gypseous soils. For non-associated PCTs (152 and 154), suitable habitat was clarified and mapped by delineating mappable microhabitats (gypsum-rich soils near salt lakes) based on soil profiles, topographic data, and vegetation indicators observed during surveys. No additional non-associated PCTs were identified as suitable.

Austrostipa nullanulla mapped suitable habitat Species Polygon, credit requirements, and a description of mapped individuals are detailed in BDAR Section 5.8 - Species Credits.

Serious and irreversible impacts Principle 3 – Very Limited geographic range.

Serious and Irreversible Impact Principle 3 for *A. nullanulla* states it is known from three (3) or less locations and/or an Area of Occupancy less than 10 km^2, or Extent of Occurrence less than 100 km^2. Species with a very limited geographic range are regarded to be at risk of Serious and Irreversible Impacts in accordance with the principle set out at Clause 6.7(2)(c) of the *Biodiversity Conservation Regulation 2017*. TBDC displays 'Known from <3 locations and/or an Area of Occupancy (AOO) <10km^2 or Extent of Occurrence (EOO) <100 km^2'.

Species that have a very limited geographic range (distribution) are generally known to;

1) Have an area of occupancy of ≤10 km2; and/or
2) Have an extent of occurrence of ≤100 km2; and/or
3) Have at least two of the following three conditions:
    a. Are severely fragmented or only known from one location;
    b. continuing decline;
    c. extreme fluctuations
4) Inhabit less than or equal to three locations in NSW. A 'location' means a geographically or ecologically distinct area where a single threatening event could rapidly affect all individuals of a species. Where a species is affected by more than one threatening event, location should be defined by considering the most serious plausible threat (SAII 2019).

Biodiversity Australia Associate Professor - Dr John Hunter of the University of New England, along with RZ Resources Environmental & Rehabilitation Officer Phil Grant, undertook targeted research investigations into *A. nullanulla* within the Development Footprint and the surrounding area from 13th -20th November 2025. During their field surveys the pair conducted 108 5x5 metre plots and found presence of *A. nullanulla* in all targeted locations at varying densities from sparce to very dense. Dr Hunter found that the species is clearly restricted to Gypsum areas, however presence varies depending on the condition of the surface (crusty or powdery) and also on the level of windblown sand deposited, although the perceived effect of this factor varied from site to site. The species occurred on all gypsum deposits regardless of landscape position, and was found in many locations originally thought unlikely, including deposits in the middle of lakebeds, as opposed to the typical predicted areas of dunes and flat terrain on top of rises. In some of the targeted areas the species was recorded in large numbers, with plots containing over 400 tussocks per 5m^2 plot). It is estimated that the total population size in NSW is

approximately 30 million individuals. This estimate covers all the areas surveyed, mapped and represented in Dr Hunter's *A.nullanulla* report shapefile. Comprehensive mapping and records of the species is currently being prepared for submission to NSW BioNet, as well as a short communication article featuring methods and results. Dr Hunter has concluded from his field investigations that the habitat and population extent of *Austrostipa nullanulla* is much larger than previously considered.

Further assessment in relation to SAII criteria has been undertaken below.

5.6.2 Background Information

Austrostipa nullanulla is a small, perennial spear grass that grows in tussocks to 0.5 m tall. It is a gypsum-obligate species that is strongly associated with lunettes and rises comprised of gypseous soils. These features are typically found on the margins of relict and salt lakes in arid and semi-arid environments (OEH, 2023). *A. nullanulla* typically flowers in the wet season from December to January but can flower at other times in the year in response to significant rainfall. However, it does not necessarily flower every year. Seed dispersal is facilitated by wind, rain, and flood events (OEH, 2023).

The known distribution of *A. nullanulla* extends horizontally 1,000 km east-west from northwest Victoria to the interior of South Australia, encompassing far southwest NSW and south-east South Australia (Figure 3). The vertical distribution stretches 600 km north-south from the Queensland border to Adelaide (SA Draft Recovery Plan 2012). Prior to Dr Hunter's survey, the total number of mature *A. nullanulla* individuals known to currently occur in Australia is estimated to be 210,000, comprising approximately 200,000 plants in NSW, 10,000 in South Australia, and an additional 1,500 in conservation areas (Towan Plains Flora and Fauna Reserve) within Victoria (TSSC, 2010). The species is listed as Endangered in NSW under the BC Act, Endangered in Victoria (*Flora and Fauna Guarantee Act 1988*) and as Vulnerable in South Australia (*National Parks and Wildlife Act 1972*). The species was delisted from the Vulnerable category under the *Environment Protection and Biodiversity Conservation Act 1999 (*EPBC Act), effective from 19 August 2010 (Comm Listing Advice 2010).

Besides being confined to a soil type with a naturally restricted distribution, the primary threats to *A. nullanulla* are grazing and habitat degradation (OEH, 2023). The plant is palatable to native (e.g. kangaroos) and invasive herbivores (e.g. rabbits), as well as feral and domestic livestock (e.g. sheep and goats). The significant grazing pressure imparted by these species can lead to reductions in density and abundance of *A. nullanulla* and complicate the identification of new populations (heavily grazed tussocks lack diagnostic features). Measures to limit the impacts of grazing include exclusion fencing, the removal of artificial water points, and feral and native herbivore control (OEH 2014; OEH, 2019). Habitat degradation can occur through numerous disturbances such as the construction of rabbit warrens (rabbits preferentially construct warrens in soft gypseous soils), habitat loss (e.g. mining and agriculture), and off-road vehicles (OEH, 2023). These impacts can also be mitigated with exclusion fences, as well as the protection of both potential and realised habitat.

The NSW population of *A. nullanulla* is under management at two (2) stronghold locations: Nulla Station 18 km north-west of Lake Victoria in the state's far southwest; and Nanya Station 100 km due north of Lake Victoria. The Subject Land is positioned between these two (2) management sites, 40 km north of Lake Victoria. Prior to Dr Hunter's surveys, the most recent estimates for the numbers of individuals contained within the two (2) management sites are > 30,000 and 10,000, respectively (OEH, 2019). The source of the contrast between the sum of these figures and the total estimated to occur in NSW (~ 200,000) appears to be the variability in reported estimates for the number of individuals at Nulla Station. For example, early estimates in 2002 reported a species total figure of 200,000 plants, with 110,000

fenced as part of a Nulla Station grazing-protection effort (DECC NSW, 2002). However, the more recent *Saving our Species* annual report cards suggest a species total figure in excess of 40,000 (OEH, 2019) with 10,000 at Nanya Station and >30,000 at Nulla Station. The recent and more conservative estimate is likely to be of higher accuracy due to the concerted conservation effort in recent years. Notwithstanding this, it is worth noting that between-year estimates of population change, which suggest stability, have only been qualitatively deduced from comparisons of photographs, and that populations, though not quantified or monitored, occur beyond the two (2) management sites (e.g. on the Subject Land).

Dr Hunter's 2025 survey findings provide solid evidence to support neighbouring landholders reports of the existence of several populations of *A. nullanulla* received in early 2025 (located to the north of Warwick Station). This suggests the occurrence of *A. nullanulla* within the Development Footprint is one of several previously unrecorded populations that currently occur within NSW. It is suggested, the entire NSW EOO stretches from Nunya station 50km to the north, southeast through Warwick Station and includes populations recorded 20 km to the south of the Development Footprint, south of Nulla Station (Figure 2, BDAR Figure 84). Future surveys to further confirm the presence and extent of *A. nullanulla* will be conducted in the region surrounding the Development Footprint as part of the planned Federation University Masters and PhD student research project, which will be funded by RZ Resources Limited. Findings from the research will add to records and understanding of the species in NSW.

The joint species population, Area of Occupancy and Extent of Occurrence mapping survey conducted in November 2025 by RZ Resources and Biodiversity Australia's Dr John Hunter of *A. nullanulla* in the area surrounding the project Development Footprint estimates an area of 675 ha of potential habitat and a population estimate of approximately 30 million. The study consisted of 108 plots (5 m x 5m) conducted in areas of suitable *A. nullanulla* habitat. See below for extracts of the survey methods and results from Dr Hunter's Survey of *Austrostipa nullanulla* (Hunter 2025).

5.6.3 *A.nullanulla* 2025 Survey Methodology

A survey of known and potential sites containing *Austrostipa nullanulla* was conducted over five days from 14 to 18 November 2025. On each day a different property was assessed, spanning the likely distribution of the species based on known records and visual assessment of habitat from remote imagery. The first two days were spent at locations within Warwick Station and Nulla Nulla Station (including the exclusion plot) where the species had been positively identified These initial surveys were focussed on becoming familiar with the clear identification features of fruiting, non-reproductive and seedling features of the grass.

At each location, a selection of areas appearing to be dominated by gypsum were visited. Randomly placed 5 x 5 m plots were established to assess the number of individuals present. Plots were also randomly placed in areas where it appeared no *Austrostipa nullanulla* were growing at the site. All plots were marked out by the placement of a 20 m length of cordage around four corner pegs, ensuring a consistent 25m^2 was surveyed. All plots were surveyed by the same two (2) staff (JTH & PG) with one staff searching for 'mature' individuals and the other staff searching for newly sprouted seedlings. Random plot placement was intended to avoid bias when assessing population size.

The population estimate for *A. nullanulla* (restricted to the far south-west corner of NSW) was calculated via an extrapolation process. Plot locations were randomly positioned, thus encompassing areas where the species occurs in varied densities, and also where the species is absent. Tussock densities within plots ranged from one per 5 x 5 m plot to 400+ per plot. Samples contributing to the estimated NSW population size were collected from all known mapped locations, across the known distribution of the

species. The calculated species count and area covered by all 5 x 5 m plots was then extrapolated onto the mapped Species Polygon area which covers 675 ha of suitable habitat for the species.

Landscape and site-scale population estimates were calculated by considering a range of factors including historic records and notes, on-ground observations at all five (5) survey locations, geomorphology, local knowledge, satellite and aerial imagery and data from recent surveys at Warwick Station for the Copi Mineral Sands Project. At sites where *A. nullanulla* forms extensive stands (e.g., Nulla Nulla Station exclosures – areas where both domestic and native animals have been excluded) plots were established across population gradients to refine density estimates and spatial patterns. Stand boundaries and patch extents were mapped using high-accuracy GPS and high-resolution imagery. This data underpins population size estimates for each of the sites and the extrapolation across suitable habitat, contributing to regional and range-wide species abundance estimates.

Mapping of habitat was conducted by visual interpretation of exposed gypsum deposits with reference to locations visited on foot and sampled via plots using ESRI World Imagery (WGS84 - Vantor, Earthstar Geographics, and the GIS User Community) within ArcGIS pro. Caveats to mapping include both over and under-mapping polygons depending on the nature of the gypsum deposits and the level of surface exposure.

5.6.4 *A.nullanulla* 2025 Survey Results

A total of 108 plots were placed across five properties (Naya Station, Nulla Nulla Station, Warwick Station, Bells Grove, and Oakbank) with 11,646 individual tussocks counted. The highest number of individuals within a 5 x 5 m plot was 490 tussocks and 17 plots were found to have no tussocks. The mapping area amounted to an estimated 675 ha Area of Occupancy within NSW, and an Extent of Occurrence of about 120 km north south and 50 km east west (approximate EOO polygon of 2,863 km^2). Based on the plot counts and mapping, it is estimated that the population within NSW could be in the order of 30 million individuals.

Habitat

Austrostipa nullanulla was mostly found on exposed gypsaceous soils most commonly associated with dunes/lunettes of lake beds. However, gilgai-like exposed gypsum within lake beds were also found to have this species present. In a broader context, the habitat was found associated with a number of vegetation types including Mallee (*Eucalyptus* dominated), Saltbush (*Maireana* and *Tecticornia*), Belah (*Casuarina pauper*), Rosewood (*Alectryon oleifolius*) and low open shrublands (*Roepera* and *Frankenia*). However, more generally these broader vegetation types occur most commonly only as adjacent communities, with *Austrostipa nullanulla* occurring separately as monospecific stands of low sparse grassland. These areas generally had a hard surface with a diverse cryptogamic crust layer. Although described from copi – flour gypsum, *Austrostipa nullanulla* was rarely found on the powdery/flour gypsum which sometimes occurred at the base of lunettes. The in-tact copi is considered to provide suitable habitat for the species, however the loose powdery (like talcum powder) form of copi appears to provide poor unsuitable habitat, and more data is required to confirm or disprove this hypothesis.

Grazing

The only location during the entire survey that had substantial patches of mature and fruiting material was within the exclosures at Nulla Nulla Station. In all other visited locations, *Austrostipa nullanulla* was grazed very heavily with only a few individuals escaping grazing, allowing them to grow to full or near full height or were found to be reproductive even when a few centimetres tall.

Additional Threats

Austrostipa nullanulla in most instances was restricted to pure gypsum surfaces and any addition of other soil types over this surface restricted its occurrence. This was not universal and, in some instances, even a depth of silt and sand likely greater than the rooting depth still had tussocks of the species. Based on these observations it is likely that increased deposition of silts and sands over exposed gypsum will reduce the potential suitable habitat for this species.

Due to the harsh conditions of growing on pure gypsum soils, it is likely that weed invasion is generally not a major threat across most of the species' distribution. However, in a few locations *Asphodelus fistulosus* (Onionweed) and *Nicotiana glauca* (Tree Tobacco) were found to be competing well on gypsum and likely reducing tussock occurrence and population sizes.

Rabbits are already listed as a threatening process as they prefer the soft gypsum soils for their burrows. However, more extensive damage was seen to be caused by mechanical ripping of dens. Much larger areas than affected by dens was damaged by this eradication method.

The breaking of gypsum hard surfaces and destroying of cryptogamic crusts by trampling and vehicle traffic can reduce population numbers where this is extensive.

5.6.5 *A. nullanulla* 2025 Survey Discussion

The results presented here indicate that *Austrostipa nullanulla* is highly likely to be a gypsophyte (gypsum specialist). Thus, it is likely that the species has a number of life history and physiological characteristics that enable it to survive within these stressful habitats. Further work should investigate if the species shows similar characteristics as found in other gypsophytes, including accumulation of sulphur, calcium, magnesium, and oxalate crystals and if this may affect palatability to grazers. During the survey, *Austrostipa nullanulla* individuals commonly exhibited green shoots where other Austrostipa species did not, indicating that it may, like other gypsophytes, access crystallised water, enabling it to persist through dry periods. As with other gypsophytes, experiments conducted by Phil Grant showed that *Austrostipa nullanulla* was able to grow on a variety of soil types (Cera et al. 2021) other than gypsum. This may indicate that there is not a fundamental edaphic reason the species is restricted to exposed gypsum, and lack of competition on these specialist soils may be a major reason for why this species is highly restricted.

While a number of vegetation community types have been described that include *Austrostipa nullanulla,* it was our observation that in most instances this species grows as monospecific stands adjacent to, or as patches within these types, rather than an integrated part/subcomponent. As with other examples globally, these gypsum lunettes/dunes and outcroppings were associated with a significant and diverse cryptogamic crust that may be a key component in helping *Austrostipa nullanulla* persist on these soils (Escudero et al. 2015).

Current population estimates indicate that around 200,000 tussocks are known. However, this estimate is largely based on the population at Nulla Nulla Station of which 110,000 is thought to be within the exclusion plots alone. However, more recently collections of the species has occurred beyond Nulla Nulla Station within NSW. Based on our survey and plot counts it is likely that the species population size in NSW alone (not including SA or Victoria populations) is an order of magnitude larger and may be up to approximately 30 million individuals, spanning an EOO area 6,000 km^2 in size (120 km north-south and 50 km east-west), with an AOO (potential habitat) estimated as 6.75 km^2 (675 ha) located within the NSW EOO. This is likely to affect the current conservation status as Endangered within the *Biodiversity Conservation Act 2016*.

Listed threats to the species include rabbit warrens, mining, agricultural cultivation, natural restriction to a specific habitat, increased watering points, and grazing (native and non-native animals). As the species was still found to exist in heavily grazed areas, grazing alone is unlikely to directly cause widespread

extinction. However, grazing would substantially reduce the amount of seed being produced, particularly in poor/dry seasons. The combination of grazing and drought over a 3 year period would pose a threat to this species. Only in seasons where rainfall is well above average might there be enough biomass growth to allow for more substantial reproductive output. This could be an issue if the seed bank only lasts three to five years. A prolonged drought lasting at least three to five years in combination with heavy grazing pressure could cause a substantial reduction in the species' ability to persist. Other threats noted during the investigation include windblown soil deposition (overgrazed landscapes) covering exposed gypsum, weed invasion specifically by *Asphodelus fistulosus* and *Nicotiana glauca*, warren ripping, and physical trampling and vehicle tracks.

5.6.6 Assessment of *A.nullanulla* 2025 survey results against SAII Principle 3 Criteria

1. Area of Occupancy (AOO)(Ha)

Area of suitable habitat currently occupied by a species within its 'Extent of Occurrence'. This area is measured by species presence in 2 km x 2 km grids. A species will generally not occur throughout the entire area of its Extent of Occurrence due to unsuitable or unoccupied habitats. For migratory species, AOO is either the breeding area or over-wintering area, whichever is smaller. Where a range or minimum estimate (shown as '>') is displayed, use the lowest value. Where a maximum estimate (shown as '<') is displayed, data is of low confidence. If no other information source(s) is available use the value but ensure low confidence is reported in the BDAR or BCAR. Where evidence demonstrates that the data is inaccurate, provide source and data to DPIE (via BAM support mailbox). These should also be included in the BDAR or BCAR. AOO <10k m^2.

The Survey of *Austrostipa nullanulla* (Hunter 2025) estimates the AOO of *A.nullanulla* within NSW is currently 6.7 km^2 (675 ha). This is smaller than the criteria metric of 10km^2. On a broader national scale, across NSW, Victoria and South Australia, the AOO is estimated at over 10 km^2.

2. Extent of Occurrence (EOO)(ha)

The spatial spread of a species to determine the degree to which risks from threatening factors could impact an entire population. It is not intended to be an estimate of the amount of occupied or potential habitat. The EEO is the area contained within the smallest polygon that can be drawn to encompass all known, inferred or projected areas of the population (but excludes records classified as vagrant) and does not exclude any areas, discontinuities, disjunctions regardless of whether the species can occur in these areas or not. Where a range or minimum estimate (shown as '>') is displayed, use the lowest value. Where a maximum estimate (shown as '<') is displayed, data is of low confidence. If no other information source(s) is available use the value but ensure low confidence is reported in the BDAR or BCAR. Where evidence demonstrates that the data is inaccurate, provide source and data to DPIE (via BAM support mailbox). These should also be included in the BDAR or BCAR. EOO <100 km^2.

The Survey of *Austrostipa nullanulla* (Hunter 2025) estimates the EOO of *A. nullanulla* as a 3,000 km triangular area shown in BDAR Figure 84 (Addendum Figure 2). The overall area extends 120 km north-south and 50 km east-west to cover a square-shaped area 6,000km^2 in size. This area is larger than the criteria metric of 100 km^2. On a broader national scale, across NSW, Victoria and South Australia, the EOO is estimated at over 60,000 km^2.

3. Number of Threat-defined locations

The number of geographically or ecologically distinct areas that a single threatening event could rapidly affect the whole population present. The size of the location depends on the area covered by the threatening event, and where a species is affected by more than one threatening event, location should be defined by considering the most serious plausible threat.

The Survey of *Austrostipa nullanulla* (Hunter 2025) estimates five (5) large disjunct locations in NSW alone, with a more refined estimate of 15-30 smaller disjunct locations across the range. This finding does not align with the criteria conditions of 'are severely fragmented or only known from one location;

(b) continuing decline;

(c) extreme fluctuations'.

On a national scale, , it is estimated that 35 disjunct populations occur at separate locations across NSW, Victoria and South Australia.

4. Extreme fluctuations in number

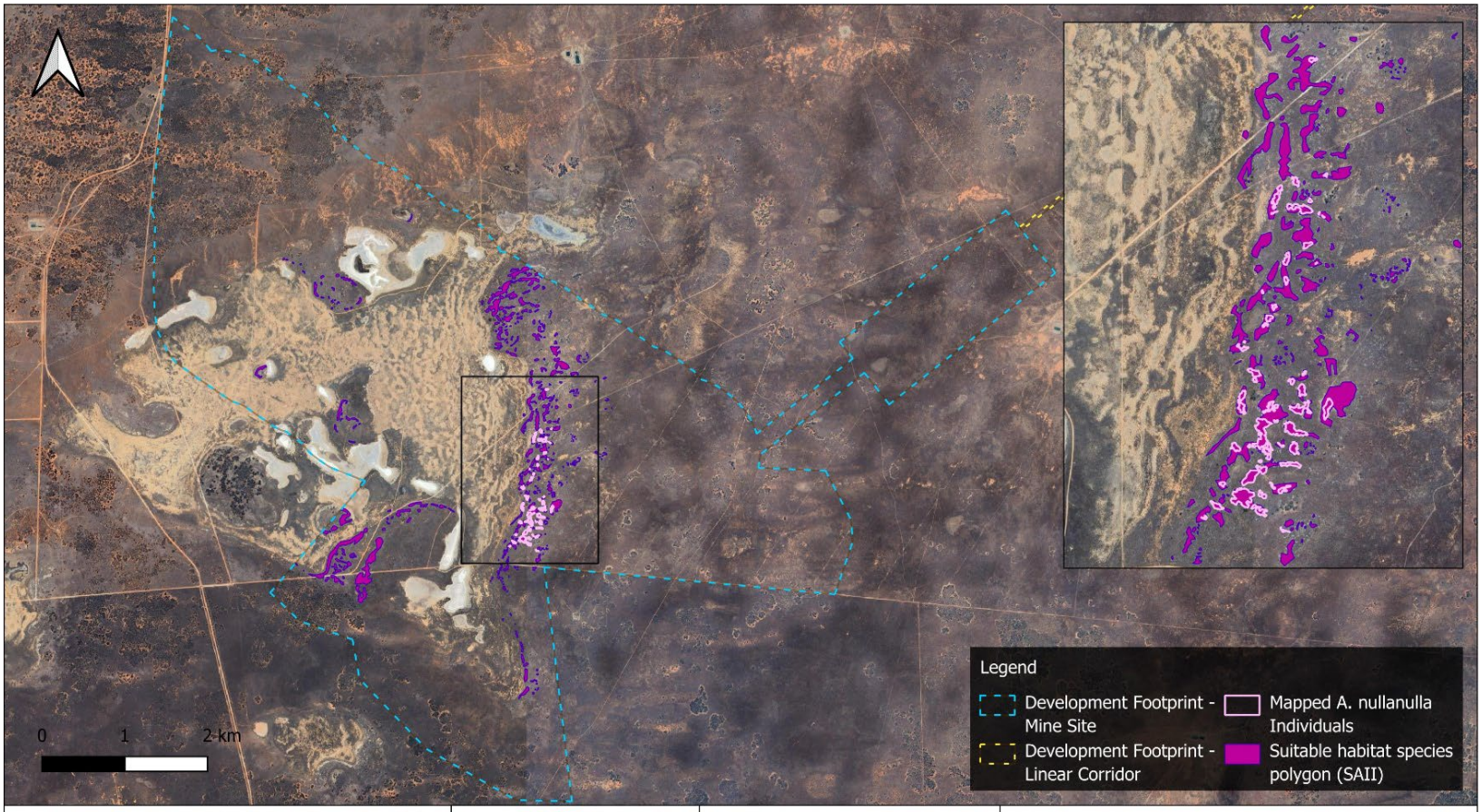
Where population size or distribution area varies widely, rapidly and frequently, and typically with a variation greater than one order of magnitude (i.e., a tenfold increase or decrease). Populations that undergo extreme fluctuations are likely to have highly variable growth rates and are therefore exposed to higher extinction risks.

The Survey of *Austrostipa nullanulla* (Hunter 2025) found that between 5-30 disjunct populations of varying sizes occur at locations spread over a 6,000 km^2 area in NSW alone. Although not enough is known about this species, there is no data to suggest extreme fluctuations in numbers, and populations are thought to be stable. On a broader national scale, , it is estimated that the 35 disjunct locations occur across an area of 60,000km within NSW, Victoria and South Australia.

In addition; *A.nullanull*a in known to occur in at least two (2) locations in South Australia on the Eyre Peninsula (including Lake Gillies Conservation Reserve) and has also been recorded in the north of the state, particularly on the margins of the many lakes across the state. The species is also known from at least three (3) locations in Victoria including Towan Plains Flora and Fauna Reserve, Murray-Sunset National Park and on the Raak Plain.

Figure 83 of the BDAR (Addendum Figure 1) Shows the mapped extent of *A.nullanulla* within the Development Footprint. Figure 84 (Addendum Figure 2) shows the expanded EOO within NSW.
Both figures were created with data collected as part of the fieldwork for Dr John Hunter's Survey of *Austrostipa nullanulla* report (Hunter 2025).

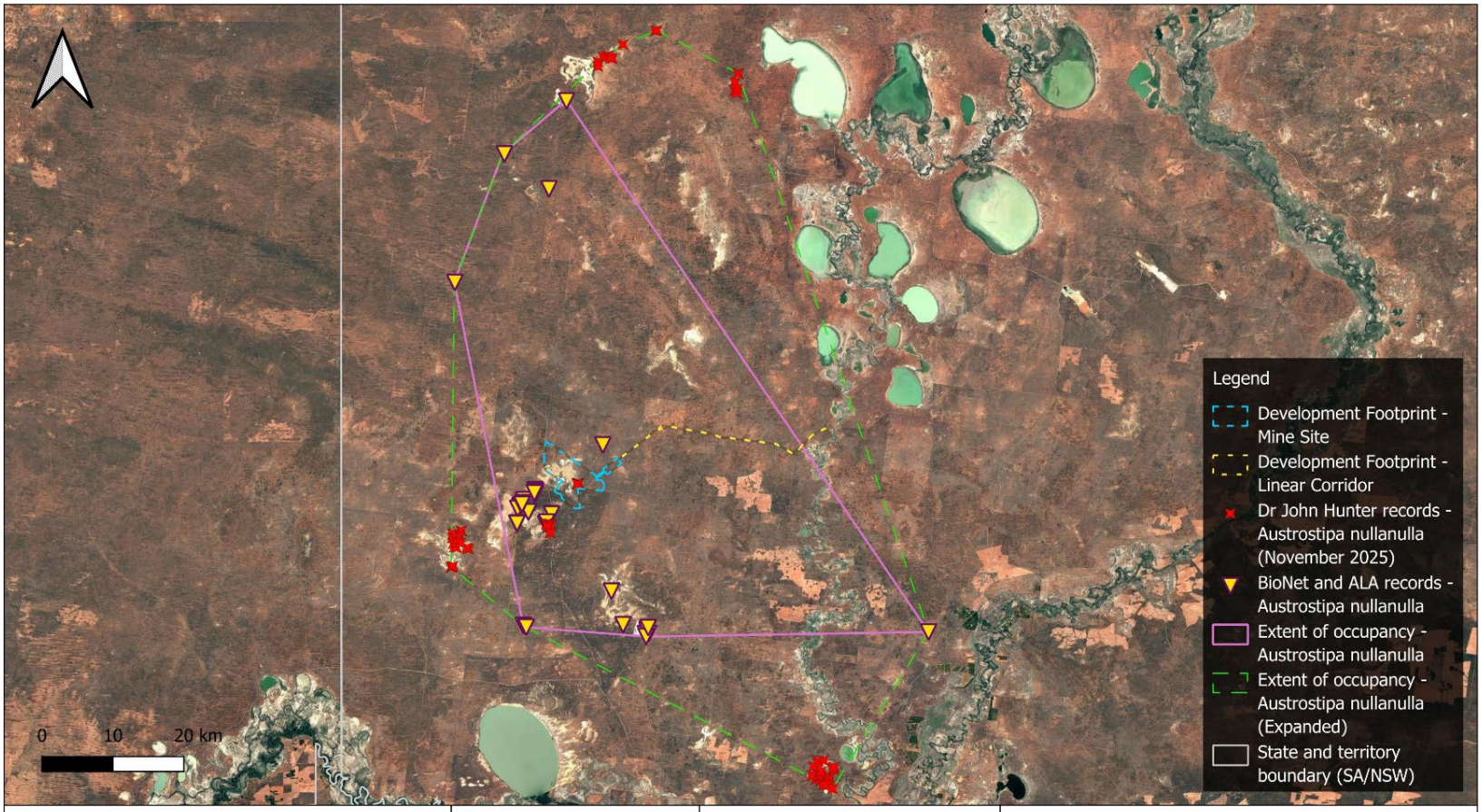
It is recognised that this species requires further effort to fully determine its EOO in NSW.



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: SAII Impacts - All Species Polygons - Development Footporint - Mine site	Biodiversity AUSTRALIA	
Drawn by: NE	Location: Warwick Station		
Date: November 2025	Client: R.W. Corkery & Co.	Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
			Scale: 1:60000

Figure 1: SAII Impacts for *Austrostipa nullanulla*



This mapping is to be considered indicative only and all derivations (e.g., vegetation communities) are best approximations and subject to errors including individual interpretation and reliance on information provided to Bio Aus where were not independently verified. All information is intended to be indicative only and no reliance for extrapolation, mapping etc. should be placed upon this map without independent validation of the information by the user. Bio Aus takes no responsibility for any subsequent error losses etc. that may arise from the use of this data without independent verification.

Project Manager: NC	Figure Name: Extent of Occupancy Austrostipa nullanulla NSW
Drawn by: NE	Location: Warwick Station
Date: November 2025	Client: R.W. Corkery & Co.
Job Number: ENS6872	Spatial Reference: GDA2020 / MGA zone 54
	Scale: 1:700000

Biodiversity AUSTRALIA

Figure 2: Extent of Occurrence *Austrostipa nullanulla* NSW

Figure 3: Federal distribution of *A.nullanulla*, across numerous locations in NSW, Victoria and SA (source: Atlas of Living Australia, 2026).

5.6.7 Evaluation of Serious and Irreversible Impact

Austrostipa nullanulla is assessed under the criteria for Principle 3: *evidence of limited geographic range.* In NSW, *A. nullanulla* is reportedly known only from two (2) locations: Nulla Station and Nanya Station (OEH, 2019; DCCEEW, 2023). These stations are 85 km apart, with the Subject Land positioned directly between. Data from the Atlas of Living Australia (ALA, retrieved from www.ala.org.au) shows a concentration of records near the salt pans 10 km south-west of the Subject Land, suggesting that the Subject Land is part of a third location. This corresponds with the TBDC justification for the inclusion of SAII entities under Principle 3, which requires that an entity is known from three (3) or fewer locations (retrieved from BioNet Atlas). Further included in the justification are criteria that an entity has an AOO less than 10 km^2 and/or an EOO of less than 100 km^2. As AOO and EOO data are not currently available on BioNet Atlas, Bio. Aust. created an EOO polygon for the NSW population of *A. nullanulla* using records from ALA, the EnviroKey BDAR, and this BDAR. The EOO encompassing all these records (i.e. NSW EOO) was calculated to be 272,693 ha or 2,726.93 km^2 . (exceeding the SAII criteria of < 100km^2). Insufficient data are available to calculate the AOO of *A. nullanulla.*

Nevertheless, *A. nullanulla* qualifies as an SAII entity due to the few locations in NSW with records of the species.

The NSW BioNet states *A. nullanulla* has a 'Very High Sensitivity to Loss' associated with clearing due to its limited geographic distribution and a 'Very High' level of biodiversity concern. Within the Mine Site Development Footprint, only 3.84 ha is mapped as occupied by *A. nullanulla* within PCT 253. As presented above, this represents on 0.56% of the confirmed habitat identified within the broader landscape during the targeted *A. nullanulla* surveys.

The NSW BioNet also states that *A. nullanulla* has a 'High Sensitivity to Gain' because of its ability to respond positively to management and colonise improved habitat. The threats faced by *A. nullanulla*, such as grazing and habitat degradation, can be readily controlled through exclusion fencing and habitat protection. Management actions such as these have a high likelihood of success in restoring and maintaining habitat suitability for *A. nullanulla* at biodiversity stewardship sites, provided the species' other habitat requirements (e.g. gypseous soils) are met.

There is uncertainty regarding the capacity of *A. nullanulla* to recolonise rehabilitated areas following mining operations. This is due to limited understanding of the factors that influence the species' distribution, such as soil, aspect, and competition. RZ Resources, with support from Federation University and Biodiversity Australia, intend to propose and fund a PhD/Honours program to undertake a study on the rehabilitation of *A. nullanulla.* The proposed research will incorporate methods used in pre-existing conservation sites at Nulla and Nunya Stations, as well as rehabilitation trials undertaken by RZ Resources geologist Phil Grant, to test whether *A. nullanulla* can be re-established during postmining rehabilitation efforts. The study will also monitor the species' abundance, extent and condition on the Subject Land to determine population trends and devise long-term management strategies that could be implemented in conservation plans for the species elsewhere throughout its range.

To ensure the viability of rehabilitation efforts, a preliminary research phase will be undertaken prior to the commencement of mining activities. This will focus on:

- Collecting *A. nullanulla* seeds from the Subject Land,
- Conducting controlled propagation trials within designated restoration areas (gypseous soils), &
- Identifying optimal cultivation techniques to enhance post-mining revegetation success.

If successful and established, measures to prevent any subsequent impacts to the rehabilitated tussocks would include the establishment of exclusion fencing, feral pest control, and monitoring.

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