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29 January 2025

Northern Territory Environment Protection Authority
Submitted via consultation portal

Environmental Referral Sturt Plateau Pipeline

Thank you for the opportunity to make this submission.

Lock the Gate Alliance is a network of over 120,000 farmers, Traditional Owners, conservationists and community members from across Australia, affected by and concerned about the impacts of coal and unconventional gas mining. We live and work in the communities affected by these industries and undertake research, advocacy and support to protect the environment, cultural heritage and society from damage. Many of our members are regionally-based, and are also experiencing first-hand the consequences of the global warming that has already occurred.

APA is proposing to construct a 37-km pipeline to transport appraisal gas from the proposed Sturt Plateau Compression Facility (SPCF) to the existing Amadeus Gas Pipeline (AGP) from where it would be delivered to Darwin. During operation, it would carry produced gas to the market. It is therefore an integral part of Tamboran B2's Shenandoah South Exploration and Appraisal Program (E&A Program) as, without the pipeline, the E&A Program and future planned gas production, would not be commercially viable. Within this context, the Sturt Plateau Pipeline (SPP) is likely to have significant cumulative impacts on biodiversity, water resources and greenhouse gas emissions. However, cumulative impact assessments have not been included for any of these environmental factors.

By the proponent's own admission, the SPP will have a significant impact on local community cohesion and social dynamics due to differing views on the project's benefits and impacts and uncertainties over the rights and interests of Native Title holders. The social impact assessment essentially acknowledges that the economic benefits flowing to the NT economy as a whole will be at the expense of the local community in the short-term, with no assurance that this will improve in the long-term.

Summary

The referral and supporting documents have not demonstrated compliance with many of the Principles of Environmental Protection and Management as set out in Part 2 of the NT *Environmental Protection Act 2019* (EP Act). Under Section 55(3) of the EP Act, the NT EPA must consider any applicable environmental objectives in determining whether a referred action has the potential to have a significant impact on the environment. In particular, the referral and ecological assessment do not demonstrate how the ***Environmental decision-making hierarchy*** has been applied to avoid and

minimise clearing of riparian vegetation and threatened species habitat during selection of the preferred alignment and the location of the temporary construction camp.

We therefore urge the NT EPA to require that this project be subject to the full scrutiny of an EIS in accordance with Section 42 of the EP Act in order to ensure that the proposed SPP will not have unacceptable impacts on the environment now and in the future, and that it will provide tangible social benefits for the local community.

Specifically, the EPA needs to require the following further work by the proponent to meet the statutory standards:

- The conduct of the social impact assessment did not account for likely disparities in capacity to access and respond to information among the most affected communities and it is critical that further work be done in this area, given assessment acknowledges that the economic benefits flowing to the NT economy as a whole will be at the expense of the local community in the short-term, with no assurance that this will improve in the long-term. The assessment fails to consider the very obvious distributional inequity, whereby the impacts of the project accrue largely to the local community and its benefits elsewhere, and the proponent must be tasked with preparing a management plan that specifically addresses and corrects this inequity.
- Cumulative impacts are acknowledged to be occurring but assessment of that impact has not been undertaken. Cumulative impact assessment must be undertaken for water resources, biodiversity, social impacts and greenhouse gas emissions, including downstream emissions.
- The greenhouse gas assessment must be redone to include the downstream use of gas transported via the pipeline as Scope 3 emissions from the project. This must be undertaken for the life of the proposed pipeline, in accordance with previous requirements issued by the EPA for the assessment of the Darwin Pipeline Duplication.
- An assessment is required of the impact of the project on aquatic ecology. This is not apparent in the material, despite the project clearly having a likely impact on several aquatic environments.
- Further work is required for the biodiversity assessment, including:
 - Clarity about the impact of the project on vegetation, the location of proposed water supply bores and application of the avoid, minimise offset hierarchy to all proposed clearing;
 - Correction of misleading omission of threatened species records in proximity to the project area. The referral material omits reference to records of several mobile threatened species within 5km of the project area which are included in the related applications for clearing pastoral land.
 - Dedicated on-ground surveys of vegetation and threatened species throughout the impact area. Given that the project site is poorly surveyed, it is necessary to conduct surveys across the impact area to describe and evaluate the project's impact and ensure adherence to the precautionary principle, the principle of evidence-based decision-making and the decision-making hierarchy.
 - Dedicated surveys for mobile and migratory species present in existing data records but with habitat present in the project area. The narrow scope of the assessment risks significantly under-estimating the significance of clearing for this project on

threatened species. This submission highlights a number of species for which dedicated surveys should be undertaken before a decision is made on this project.

- Further assessment of the key impact of habitat fragmentation in a largely undisturbed landscape, including loss of mobility, introduction of weeds and increased predation on small mammals.

More details are provided below.

Significant social impacts

The social impact assessment (Appendix H) describes the impacts of the SPP on local communities including the suburbs and localities of Birdum, Daly Waters, Pamayu, Newcastle Waters and Elliott. The nearest community with health, education and police services is Elliott, located 70km to the south, while hospitals, tertiary education facilities and civic services are located at Katherine 280km to the north or at Tennant Creek 330km to the south. The local population is mostly Aboriginal and is characterised as having lower rates of education, higher unemployment, lower income levels and poorer health than the NT average.

However, it appears that these demographics were not taken into consideration when designing a consultation program that consisted of online meetings, in-person meetings in Darwin, Katherine and Elliott, an information session in Elliott and dissemination of digital and hard copies of a fact sheet. While formal consultation with First Nations Traditional Owners was conducted in relation to Native Title, the referral claims that “local Aboriginal people have been included in broader community consultations” and “have had equal opportunities to access information and raise questions, just like any other community member.” It is frankly astounding that the consultation program assumed equality across the community and did not design the consultation process specifically to reach out to this mostly Aboriginal population who may not have had equal opportunities to access to computer devices and transport options. It is therefore not surprising that the feedback received (Table 2 in Appendix H) is mostly from government agencies, local businesses and a local landholder.

The proponent’s own pre-referral screening (Appendix A) indicates that the SPP is likely to have a significant impact on the community due to community division over project benefits and impacts and uncertainties over the rights and interests of Native Title holders. The social impact assessment (SIA) agreed that the SPP “could have a noticeable and significant effect on community cohesion and social dynamics.” While the proponent recognises “the diverse perspectives and the potential for fractured relationships among Traditional Owners and the broader community,” no tangible mitigation measures have been proposed other than an ongoing community grants program and maintaining a “proactive and adaptive approach” to community engagement and benefit-sharing.

The SIA found that the local community is not likely to benefit from employment opportunities or training opportunities due to the skills shortages and the short duration of the construction phase. The economic assessment (Appendix F) confirms that while there will be little benefit for the local community by way of 15 new direct and indirect jobs, the NT economy will be \$18.2 million better off.

The cumulative impact assessment is clearly unable to predict what benefits/costs the local community might experience as a result of the SPP as considered within the wider context of

regional gas development. With regard to social and community dynamics, the SIA predicts potential changes in community composition, improvement or worsening of community division and increasing impacts on traditional land use and access. Section 6.1 of the referral report notes that the cumulative impacts to the social and economic environmental factors have the potential to be significant.

By failing to design community consultation planning to meet local community needs or to address identified social impacts with any meaningful and tangible commitments to benefit-sharing, the referral is not consistent with the ***Decision-making principle***. The SIA essentially acknowledges that the economic benefits flowing to the NT economy as a whole will be at the expense of the local community in the short-term, with no assurance that this will improve in the long-term.

Greenhouse gas emissions

The proponent's greenhouse gas assessment fails to include the emissions from downstream use of the gas transported through the pipeline in its Scope 3 emissions calculations. The *Environment Protection Act 2019* (Section 10(1)(b)) definition of an impact includes "an event or circumstance that is an indirect consequence of the action and the action is a substantial cause of that event or circumstance." Similarly, according to the widely accepted and applied Greenhouse Gas Protocol, "End use of goods and services sold by the reporting company" are downstream Scope 3 emissions of a company: the end use of the service sold by APA in this pipeline, is the use of the gas it transports. This was the approach taken by the EPA in its requirements for assessment of the Darwin Pipeline Duplication ("The emission of greenhouse gases would be an indirect consequence of the operation of the DPD, and the DPD is a substantial cause of those emissions") and the EPA should issue a direction requiring a proper assessment of greenhouse gas emissions from this project.

The assessment claims that the proper place for assessment of greenhouse gas emissions from transported gas is in the assessment of gas extraction. This pipeline would have a considerably longer lifetime (40 years) than the fracking pilots that have recently been granted EMPs by DEPWS and during its life, it will require ongoing gas production, transport and use in order for it to have commercial return. Therefore a greenhouse assessment of the lifetime greenhouse gas emission from SPP is required and is a distinct assessment requiring evaluation and decision, including 40 years of downstream Scope 3 emissions from the use of gas transported by the pipeline. Similarly, as for the Darwin Pipeline Duplication, the proponent should be required to "demonstrate how the proposal will be implemented to meet the NT EPA's objectives for the Atmospheric Processes environmental factor and the NT Government's goal of achieving net zero greenhouse gas emissions by 2050." This is particularly important for the EPA's evaluation of this project, given that its lifetime contribution to greenhouse gas emissions extends well beyond 2050.

Project area poorly described

There is confusion around the terminology used in the referral and supporting documents. The ecological assessment describes the 500-m corridor as the "project corridor" and the 150-m corridor as the "project area". The referral report describes the 500-m wide corridor as the "project area" and the 150-m corridor as the "survey area" but also refers to a "disturbance footprint" which is yet to be determined. This makes interpretation of the results and comparisons between reports unnecessarily confusing.

The site layout plan (Figure 3) does not contain sufficient detail to accurately assess impacts. The locations of two new proposed bores are not shown because they have not yet been determined (Section 2.3.1.4 in the referral). While the referral claims that the temporary construction camp and laydown area is located within the “project footprint” (Section 1.1), it is shown on Figure 3 as being located just off the Stuart Highway well outside what is assumed to be the project footprint (i.e. a pipeline). This location is confirmed on p. 60 as being 9km southwest of the project. The additional clearing of 21ha of native vegetation for a temporary construction camp has not been justified anywhere in the reports. The referral has not demonstrated how this location has avoided and minimised environmental impacts or what alternative sites were considered and therefore has not applied the ***Environmental decision-making hierarchy***.

Inadequate field survey

The field survey effort and extent were severely restricted both temporally and spatially and do not meet best practice standards as claimed in Section 3.1 of the ecological assessment (Appendix E). Although weather conditions may have been considered ideal, field assessment was only undertaken during a single six-day period at the start of the 2024 dry season, with no replication during other times of the year to detect those species that are migratory or wide-ranging (i.e. wet season surveys for threatened waterbirds). It is therefore unsurprising that no threatened species were detected during systematic surveys, while three species (Gouldian Finch, Grey Falcon and Glossy Ibis) were observed opportunistically during the same time frame, but over a wider area.

Ground-truthing of vegetation was restricted to a 150-m survey corridor and then extrapolated to the wider 500-m project corridor with the caveat that “extrapolated data outside the area ground-truthed during field assessment should be interpreted with caution.” Vegetation and habitat mapping is inadequate as it is confined to narrow linear corridors that do not give an indication of the extent, configuration or connectivity of vegetation communities/fauna habitats within the wider landscape (Figure 13).

Although no threatened vegetation communities or flora species were recorded within the project area, impact assessment was restricted to ground-truthed vegetation which comprises only about 30% of the 500-m wide project corridor and does not take into account indirect or off-site impacts. While none of the ground-truthed vegetation communities aligned with SREBA high-value vegetation, it is unclear whether this is due to absence of high-value vegetation or is an artefact of overly restrictive assessment parameters. The related applications for clearing pastoral land include reference to a number of threatened species records within 5km of the project area, such as the Northern Blue-tongued Skink and Yellow-spotted monitor. No mention is made of these records in this referral material and there is a real risk that the extremely limited approach taken by the proponent has under-estimated impacts on several species.

The reliance on a single systematic survey to detect threatened species over a small proportion of the project corridor and failure to map vegetation and habitats over the wider landscape demonstrate that the field survey methodology is not consistent with the ***Precautionary principle***. In remote NT regions where there is considerable scientific uncertainty about threatened species’ distribution and abundance, the presence of threatened species must be assumed if suitable habitat is present anywhere within or adjacent to the proposed activity. However, seven species of

shorebirds highlighted by the EPBC Protected Matters Search Tool were eliminated from further consideration on the basis that there was a “lack of suitable ground-truthed habitat.”

Significant impacts on flora and fauna

Because the Northern Territory has only a very limited list of significant vegetation communities¹, it is imperative that these be protected wherever possible. The referral assesses the riparian vegetation to be removed as part of SPP construction as being of low value in Section 3.2.2, but nevertheless recommends that clearing of up to 22ha of this vegetation community be avoided. However, no alternative options to avoid or minimise impacts to riparian vegetation and aquatic habitat are examined in the referral documents which instead rely on standard mitigation measures rather than avoidance. Although horizontal boring would be used under the Stuart Highway, this option has not been considered in relation to crossing the ephemeral water body or two ephemeral streams to avoid riparian habitat.

The ecological assessment noted that the project area overlaps with 13 SREBA vegetation types, but only seven of these were subject to ground-truthing. This means that any direct or indirect impacts to moderate- to high-value wetland and run-on vegetation communities located outside the narrow project corridor have been ignored.

According to the ecological assessment, the proposed SPP will adversely affect 84ha of habitat critical to the survival of the Painted Honeyeater and 135ha of habitat critical to the survival of the Northern Blue-tongued Skink and Yellow-spotted Monitor. This is likely to be an underestimate as impact assessment was confined to ground-truthed areas and does not include indirect impacts within the 500-m project corridor or off-site. Although alternative options are listed in Section 2.4.2 of the referral report and shown in Figure 12, these do not demonstrate how impacts to threatened species’ habitats have been first avoided and then minimised. This is not consistent with the ***Environmental decision-making hierarchy***. Mitigation measures recommended are standard and would apply regardless of which alternative alignment was selected.

Threatened species excluded from surveys

The ecological assessment listed eight threatened fauna species as being highly to moderately likely to occur within the project area: Gouldian Finch, Grey Falcon², Painted Honeyeater, Australian Painted Snipe, Northern Blue-tongued Skink, Yellow-spotted Monitor, Oriental Pratincole and Glossy Ibis. However, targeted searches were only undertaken for four of these: Gouldian Finch, Painted Honeyeater, Greater Bilby and Yellow-spotted Monitor. Targeted surveys for the latter two species included daytime searches for signs of activity within the 150-m wide project area. While it is highly unlikely that any recent signs of activity would be detected for these wide-ranging species within such a restricted area, this does not indicate their absence from the wider area, or even within the 500-m project corridor. During SREBA surveys conducted in 2020-1 that covered 80,000km², the Yellow-spotted Monitor was detected opportunistically within *Eucalyptus/Corymbia* open woodland

¹ NT Government (2024). Land Clearing guidelines.

https://nt.gov.au/__data/assets/pdf_file/0007/236815/land-clearing-guidelines.pdf

²Two Grey Falcons were detected opportunistically to the east of the project area by AECOM in July 2024. This may have been a breeding pair as the sighting was within the breeding season for the species and one bird was heard calling. Their location is very close to Trap site 1 in Figure 13.

on only two occasions.³ This illustrates the elusive nature of the species being targeted and the need to assume their presence wherever suitable habitat is found.

The ecological assessment has not considered all the threatened species that could potentially occur within the project area as it is overly reliant on existing database records, and has not taken into account surveys undertaken as part of gas development in the surrounding area. Failure to consider any species recorded more than 30km from the project area does not recognise the depauperate nature of the NT's database records, especially in remote areas such as the Beetaloo Basin. The 30km cut-off has not been justified, is overly restrictive and risks discounting wide-ranging and migratory threatened species.

The lack of pre-development flora and fauna records was noted by Justice Pepper who recommended that a Strategic Regional Environmental and Baseline Assessment (SREBA) be undertaken prior to lifting the moratorium on fracking.⁴ Despite the severe limitations and undue haste with which the SREBA surveys were undertaken, significant range extensions were recorded for some of the 1644 plant taxa observed. Of particular importance to this project, SREBA surveys detected the Northern Shrike-tit at 37 new sites and recorded the Gouldian Finch and the Greater Bilby at 52 and 15 new sites, respectively.⁵ One Crested Shrike-tit record was located outside the mapped habitat extent and range extensions were recorded for two other fauna species, demonstrating that current mapping and database records are unreliable in remote areas. A survey undertaken by the NT Flora and Fauna Division, but outside the scope of the SREBA, identified 13 new localities for the Ghost Bat, and led to refinements of this species' distribution modelling. The scope of the assessment undertaken for the SPP is too narrow to detect threatened species such as the Greater Bilby, Grey Falcon, Yellow-spotted Monitor and Ghost Bat.

Even though the following species are noted as being known or likely to occur⁶ within the project area using the EPBC Protected Matters Search Tool, they were excluded from further consideration on the basis that no records occur within 30km:

- The Northern Shrike-tit was recorded in *Corymbia/Eucalyptus* woodlands during SREBA surveys in 2020.⁷ These correspond to vegetation communities 325 and 331 in the SPP project area (Table 10, Appendix E). The species was also assumed to occur within the Shenandoah South and Carpentaria pilot program areas. Therefore, it should have been subjected to targeted searches using playback calls. This species is particularly impacted by habitat fragmentation but other major threats include fire and feral animal predation.⁸

³ Davis et al. (2021). Beetaloo GBA Region Baseline Survey Program. Research Institute for Environment and Livelihoods, Charles Darwin University, Darwin.

https://www.bioregionalassessments.gov.au/sites/default/files/beetaloo_gba_final_report_final_v2.pdf

⁴https://frackinginquiry.nt.gov.au/__data/assets/pdf_file/0003/494301/Chapter-15_Strategic-regional-environmental-and-baseline-assessment.pdf

⁵ Davis et al. (2021). Beetaloo GBA Region Baseline Survey Program. Research Institute for Environment and Livelihoods, Charles Darwin University, Darwin.

https://www.bioregionalassessments.gov.au/sites/default/files/beetaloo_gba_final_report_final_v2.pdf

⁶ Ghost Bat and Mertens' Water Monitor noted as possibly occurring on Search Tool.

⁷ https://www.bioregionalassessments.gov.au/sites/default/files/beetaloo_gba_final_report_final_v2.pdf

⁸ DCCEEW (2000). Conservation Advice Crested Shrike-tit (northern).

<https://www.environment.gov.au/biodiversity/threatened/species/pubs/83091-conservation-advice-11052021.pdf>

- The EMP for the Shenandoah South E&A Program reported that the Northern Brushtail Possum was recorded on Kalala Station in 2022.⁹ However, this species was not subject to a targeted survey as part of the SPP referral. Major threats include habitat fragmentation as this species is unlikely to survive in smaller remnants.¹⁰
- The single targeted search for Greater Bilby over a 150-m corridor would be extremely unlikely to detect this wide-ranging and declining species. Although the DCCEEW survey guidelines for this species are vague¹¹, the WA Department of Biodiversity, Conservation and Attractions (DBCA) Guidelines for bilby surveys recommend using transect surveys to provide extensive and representative coverage of all suitable habitat types as a minimum.¹² Furthermore, the guidelines recommend that surveys include a suitable buffer zone extending 6km beyond the perimeter of the impact area, or the equivalent width of two bilby home ranges. Major threats to this species include fox and cat predation, high rabbit densities and mining infrastructure.¹³
- The Plains Death Adder was considered as potentially occurring within the Shenandoah South E&A Program area but was not considered or subjected to a targeted search as part of the SPP referral. Major threats include fire and Cane Toads.¹⁴
- Mertens' Water Monitor was considered as potentially occurring within the Shenandoah South E&A Program area but was not considered or subjected to a targeted search as part of the SPP referral. The main threat to this species is the introduction of Cane Toads.¹⁵
- The NT Government considered it a priority that the Ghost Bat be surveyed as part of the SREBA surveys prior to fracking approval.¹⁶ As this was not possible due to logistical constraints, it should therefore be a requirement that targeted surveys be undertaken for this species as part of all approvals for gas development in the Beetaloo Basin. This species has not been adequately surveyed or assessed in the referral documentation even though it is at severe threat of habitat loss and degradation due to mining activities.¹⁷

Failure to detect these species does not mean that they do not occur; a much more extensive and comprehensive survey effort would be required to discount them from further consideration. Failure to undertake targeted searches for species that have been detected or have a high potential to occur in surrounding areas, demonstrates that the **Precautionary principle** has not been applied. Due to unscientific certainty about threatened species' distribution and abundance, a precautionary assumption must be made that threatened species occur if suitable habitat is present.

⁹ Tamboran Pty. Ltd. (2024). Beetaloo Basin Shenandoah South E&A Program EMP.

https://environment.nt.gov.au/__data/assets/pdf_file/0006/1391748/approved-emp-tamboran.pdf

¹⁰ DCCEEW (2021). Conservation Advice Northern Brushtail Possum.

<https://www.environment.gov.au/biodiversity/threatened/species/pubs/83091-conservation-advice-11052021.pdf>

¹¹ DCCEEW (2011). Survey guidelines for Australia's threatened mammals.

<https://www.dcceew.gov.au/sites/default/files/documents/survey-guidelines-mammals.pdf>

¹² DBCA (2017). Guidelines for surveys to detect the presence of bilbies, and assess the importance of habitat in Western Australia. Version 1. <https://library.dbca.wa.gov.au/FullTextFiles/072208.pdf>

¹³ DCCEEW (2016). Conservation Advice Greater Bilby.

<https://www.environment.gov.au/biodiversity/threatened/species/pubs/282-conservation-advice-15072016.pdf>

¹⁴ DCCEEW (2011). Conservation Advice Plains Death Adder.

<https://www.environment.gov.au/biodiversity/threatened/species/pubs/83821-conservation-advice.pdf>

¹⁵ DCCEEW (2023). Conservation Advice Mertens' Water Monitor.

<https://www.environment.gov.au/biodiversity/threatened/species/pubs/1568-conservation-advice-21122023.pdf>

¹⁶ https://www.bioregionalassessments.gov.au/sites/default/files/beetaloo_gba_final_report_final_v2.pdf

¹⁷ DCCEEW (2026). Conservation Advice Ghost Bat.

https://ftp.dwer.wa.gov.au/permit/4875/Jimblebar%20Targeted%20Ghost%20Bat%20Survey%20GHD%2020220201_Optimized.pdf

The desktop survey undertaken for the SPP is not based on the best available evidence and therefore is not consistent with the ***Principle of evidence-based decision-making***. In particular, Appendix E failed to consider relevant fauna records from the SREBA surveys¹⁸ and fauna surveys undertaken as part of the Shenandoah South E&A Program EMP.¹⁹ These previous surveys indicated that there is a high probability of species' range extensions being recorded in the Beetaloo Basin, and the potential for a further six threatened species to occur within the project corridor. The decision to exclude them from further survey and assessment is not justified.

Failure to address fragmentation and key threatening processes

The referral proposes to clear 145.8ha of native vegetation during construction and to maintain 112ha of clearing during SPP operation. However, the referral cautions that these areas are unconfirmed and may change depending on the final route chosen.

Although fragmentation is one of the most serious impacts associated with linear developments including pipelines, the referral fails to mention it and Appendix E refers to it on only three occasions. Fragmentation must be considered separately to habitat loss as it also acts to reduce habitat connectivity and increase edge effects, both of which lead to long-term habitat degradation and eventual habitat loss. This is a particular issue for the SPP as the existing vegetation is described as "largely undisturbed" with weeds restricted to previously disturbed areas and access tracks. The SPP will permanently fragment existing intact habitat, creating more disturbance and access tracks that will be vectors for weeds and pest animals and create movement barriers for sedentary ground-dwelling animals like the Northern Blue-Tongued Skink.

The introduction of linear infrastructure has the potential to intensify stresses on small and medium mammals from predation, since introduced predators like foxes and cats are known to use linear clearings. Cane toads also prefer to travel along roads and cleared fence lines while avoiding dense vegetation (Brown *et al.* 2006).²⁰ It is noteworthy that the ecological assessment recorded feral cats near the "Tamboran camp," demonstrating that, if any feral pest management plans have been implemented, they are clearly not working. The referral has not considered significant cumulative impacts of fragmentation, frequent fire and exotic pests and predators for any threatened fauna species.

The referral downplays SPP impacts as "temporary surface disturbance" that will not form a "permanent barrier to fauna movement." The operational right of way (ROW) would be permanently managed as a 30-m wide cleared corridor. Even though the additional disturbed areas required for construction might be allowed to regenerate, the eventual return of the overstorey may take decades depending on the age of trees that would be removed. Increased predation by cats and foxes is likely to have significant impacts on the Greater Bilby, Grey Falcon²¹, the Northern Shrike-tit and Northern Brushtail Possum. The latter two species are particularly sensitive to habitat

¹⁸ https://www.bioregionalassessments.gov.au/sites/default/files/beetaloo_gba_final_report_final_v2.pdf

¹⁹ Tamboran P/L (2024). Beetaloo Basin Shenandoah South E&A Program. https://environment.nt.gov.au/__data/assets/pdf_file/0006/1391748/approved-emp-tamboran.pdf

²⁰ Brown *et al.* (2006). Toad on the road: Use of roads as dispersal corridors by cane toads (*Bufo marinus*) at an invasion front in tropical Australia. *Biological Conservation* 133(1): 88-94. <https://doi.org/10.1016/j.biocon.2006.05.020>

²¹ DCCCEW (2020). Conservation Advice Grey Falcon. <https://www.environment.gov.au/biodiversity/threatened/species/pubs/929-conservation-advice-09072020.pdf>

fragmentation^{22, 23} and the brushtail possum prefers habitats with a high shrub density.²⁴ While Cane Toads are apparently already established in the project area (Table 21, Appendix E), they were not detected during SPP systematic surveys. Increased disturbance and the creation of cleared corridors will facilitate their movement throughout habitat surrounding the ROW. This would have a significant impact on the Plains Death Adder, Mertens' Water Monitor and the Yellow-spotted Monitor.

Although the high frequency of fires in the project area has been noted in Section 2.5, the ongoing impact of inappropriate fire regimes on biodiversity including threatened species, which is a key threatening process (KTP), has not been discussed in the referral. Predation by cats and foxes have not been referred to or assessed as KTPs even though the proposed pipeline will increase access to these feral predators. The referral has not acknowledged the interaction between two KTPs, fire and exotic predator activity in impacting small mammal populations (Geyle et al. 2024).²⁵

Habitat fragmentation is a driver of habitat degradation that leads to a loss of biological diversity and ecological integrity. There is a real and not remote possibility that species already under threat from the combined threats of inappropriate fire regimes and predation, will be significantly impacted by cumulative impacts associated with the proposed pipeline. The referral therefore contravenes the **Principle of conservation of biological diversity and ecological integrity**. The cumulative impacts of grazing, fire regimes and predation are closely interrelated and strongly implicated in past and current species declines across northern Australia.²⁶

Failure to assess aquatic ecosystems

An aquatic ecology assessment has not been undertaken despite the presence of “numerous claypan swamps, lakes and floodplains” in and around the project area.²⁷ The aquatic features of the large ephemeral water body within Newcastle Creek and two ephemeral streams to be impacted by trenching are mapped in Figure 2.1, but their aquatic features have not been described in any reports.

The referral has not provided any baseline data to qualify water quality or otherwise describe the health or habitat values of surface water or groundwater with the aim of restoring them to a similar condition post-development.

The SPP is likely to have a significant impact on surface water because it will cross the southern end of a large ephemeral water body within Newcastle Creek, posing a genuine risk of water pollution and soil erosion. It has not been demonstrated how hydrological processes will be maintained

²² Rankmore B R & O F Price (2004). Effects of habitat fragmentation on the vertebrate fauna of tropical woodlands, Northern Territory. In: Conservation of Australia's Forest Fauna, edited by Dan Lunney. Royal Zoological Society of NSW, Mosman.

²³ DCCEEW (2015). Conservation Advice *Falcunculus frontatus whitei*.

<https://www.environment.gov.au/biodiversity/threatened/species/pubs/26013-conservation-advice-01102015.pdf>

²⁴<https://www.environment.gov.au/biodiversity/threatened/species/pubs/83091-conservation-advice-11052021.pdf>

²⁵ Geyle et al. (2024). Unravelling predator-prey interactions in response to planned fire: a case study from the Tanami Desert. Wildlife Research 51.

<https://doi.org/10.1071/WR24059>

²⁶ Fitzsimons J. et al. (2010) Into Oblivion. Report prepared for The Nature Conservancy.

<https://www.natureaustralia.org.au/content/dam/tnc/nature/en/documents/australia/Into-Oblivion.pdf>

²⁷https://epbcpublicportal.environment.gov.au/_entity/sharepointdocumentlocation/daf4a5a5-53c9-ef11-b8e8-002248978a7f/2ab10dab-d681-4911-b881-cc99413f07b6?file=00-2024-10027%20Referral.pdf

post-trenching. The surface water assessment (Appendix I) has not provided any specific mitigation measures to avoid aquatic impacts.

By omitting key information on aquatic ecosystems and water resources, the SPP referral has not clearly demonstrated that water impacts and risks will be acceptable. The lack of scientific certainty around the current condition of water resources, and the failure to even describe any mitigation measures to be employed, demonstrates that the ***Precautionary Principle*** has not been applied.

Flooding is a major risk for underground pipelines. The referral's flood modelling predicts flood depths of 2-3m where the pipeline crosses the ephemeral water body. It is also concerning that one of the main connection points at the Sturt Plateau Facility is most at risk of flooding. Flood inundation can change the weight and density of the soil and lead to bending and shifting causing the pipe to rupture over time, while higher flow velocities can increase scouring and erosion (Abegaz *et al.* 2004).²⁸

Flood modelling (Appendix I) indicates the risks associated with stormwater and flooding but only provides very broad mitigation and management guidelines to prevent erosion and sedimentation. The report does not refer to specific standards or best practice guidelines to ensure that existing flows will be maintained and the risk of pipeline damage will be minimised in the event of increased flooding frequency associated with climate change. This demonstrates that the ***Principle of intergenerational and intragenerational equity*** has not been applied as there is a real and not remote risk that flooding will increase in frequency and intensity with climate change and that flood modelling undertaken will soon become obsolete.

Significant cumulative impacts

The referral concludes in Section 6.1 that there is “low potential” for significant cumulative impacts for all environmental factors except for social and economic factors. This is despite the fact that cumulative impact assessments were not undertaken for biodiversity, water resources or greenhouse gas emissions. This demonstrates a failure to understand that SPP forms an integral part of the much larger approved Shenandoah South E&A Program and the beginning of regional gas development. Without a pipeline to transport gas to the market, gas development in the Beetaloo could not proceed.

The ecological assessment recognises that the SPP would have cumulative impacts with the Shenandoah South E&A Program but then rules out direct comparisons between the two projects on the basis that the latter used a different impact assessment methodology and did not calculate the proposed impact area for ground-truthed vegetation. It concludes that even though cumulative impact assessment was not possible, the SPP impacts will not be significant.

Based on this flawed reasoning, it would never be possible to assess cumulative impacts with any other projects unless they were assessed using identical methodologies. This is neither reasonable nor practicable and demonstrates an overly narrow approach to cumulative impact assessment. Although the methodologies applied for the Shenandoah South E&A Program and the Carpentaria Pilot Project differ to that used for the SPP, it is clear from the EMPs that all these projects are likely

²⁸ Abegaz *et al.* (2024). Impact of flooding events on buried infrastructures: a review. *Frontiers in Built Environment*: 10. <https://www.frontiersin.org/journals/built-environment/articles/10.3389/fbuil.2024.1357741/pdf>

to have significant impacts on habitat for the same threatened fauna species. The SPP ecological assessment has elected to ignore at least six of these species on the basis of an overly restrictive approach to determining likelihood of occurrence (i.e. 30-km cutoff for database records). However, at least 14 threatened fauna species are at risk of significant cumulative impacts due to habitat loss and fragmentation, high frequency fires, increased access to introduced predators and pests and road mortality from the SPP and other gas development in the Beetaloo Basin.

The EPBC referral²⁹ noted in Section 4.1.9.2 that the SPP “could impact water resources when cumulative impacts are considered in relation to other current and potential future unconventional gas developments at local, aquifer, catchment and regional scales.” However, the current referral mentions its own groundwater use (70ML) but does not include a cumulative impact assessment. Groundwater use needs to be assessed within the context of water extraction for unconventional gas projects Shenandoah South (375 ML/year), Carpentaria Pilot (licence to extract 750 ML/year) and the Sturt Plateau Compression Facility (12 ML/year). Cumulative groundwater impacts are not confined to gas projects but must also include all landowners/industries accessing groundwater in the Beetaloo Basin, including for agricultural uses (6000 ML/year).³⁰ Reasonably foreseeable developments, including the expansions of the Shenandoah and Carpentaria projects, have not been considered. The cumulative extraction of vast amounts of groundwater associated with approved and future gas development and ongoing agricultural uses has not been assessed even though it is highly likely to be significant and subject to the water trigger.

A cumulative impact assessment has not been undertaken for surface water resources or groundwater-dependent ecosystems, including stygofauna. The SPP and infrastructure associated with surrounding unconventional gas projects would remove important riparian vegetation and impact local streams and wetlands, posing a significant risk of polluting aquatic ecosystems through planned releases and accidental spills. EMPs prepared for all unconventional gas development projects in the Beetaloo have taken only a cursory approach to GDE assessment by relying on broad-scale predictive mapping and SREBA surveys from the region.

A cumulative impact assessment has not been undertaken as part of the air quality and greenhouse gas assessment (Appendix B). The report only mentions cumulative impacts in relation to land clearing and does not consider any other existing or approved Beetaloo gas developments. The 17,074 tCO₂-e of Scope 1 GHG emissions for the SPP needs to be assessed within the context of other projects in the Beetaloo Basin, namely:

- The Shenandoah South E&A Program - expected to generate 190,976 tCO₂-e total residual emissions;
- The Sturt Plateau Compression Facility - expected to generate approximately 58,000 tCO₂-e Scope 1 GHG emissions at its peak in 2026; and
- The Carpentaria Pilot project - expected to generate an average of 30,000 tCO₂-e annually without flaring, and 475,000 tCO₂-e with flaring.

²⁹https://epbcpublicportal.environment.gov.au/_entity/sharepointdocumentlocation/daf4a5a5-53c9-ef11-b8e8-002248978a7f/2ab10dab-d681-4911-b881-cc99413f07b6?file=00-2024-10027%20Referral.pdf

³⁰ https://environment.nt.gov.au/__data/assets/pdf_file/0006/1391748/approved-emp-tamboran.pdf

The cumulative impact assessment also needs to consider the SPP's substantial contribution to Scope 3 emissions as it would be the only means of transporting appraisal gas and future produced gas to the market to be burned elsewhere.

The referral and supporting documentation demonstrate a failure to understand and properly consider cumulative impacts which are highly likely to be significant. This demonstrates a disregard for the ***Principle of intergenerational and intragenerational equity*** to ensure that the productivity of the environment is maintained and enhanced for the benefit of present and future generations. Given the lack of full scientific certainty surrounding the gas development industry in the Beetaloo Basin, decision-making guided by the ***Precautionary Principle*** recommends careful evaluation to avoid serious and irreversible harm to the environment.