Clearing Assessment Report – CPS 818

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Tanami Road Upgrade Stage 1
SLK 40-60 Material Areas

Tanami Road
Kimberley Region
EOS 1890

D25#122858
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1 PROPOSAL

1.1 Purpose and Justification

Tanami Road is currently an unsealed road in the Kimberley region connecting Halls Creek and Alice Springs (in the Northern Territory). The government has committed to seal the road as it poses a safety hazard to road users and at times becomes inaccessible for long periods during the wet season. At over 300 km in length, this will represent a substantial upgrade over many years. The upgrade of the road between SLK 0 (Halls Creek) and SLK 311 (where the road intersects the Northern Territory border) will be completed in stages over a 10-year timeframe subject to the availability of government funding.

Main Roads commenced Tanami Road construction works in March 2023 and is anticipating sealing up to 40 km of road by the end of 2025. To support the construction of Tanami Road, Main Roads commenced investigation and stockpiling of materials in late 2022 and has utilised material in the construction works in 2024. As construction continues with the planned commencement of the SLK [REDACTED] section in 2025, there is a need to identify suitable naturally occurring gravels and rock in early 2025.

1.1.1 Main Roads Approach to Road Safety and the Environment

Main Roads is committed to minimising the environmental impacts of all of its activities and manages the State road network to achieve balanced economic, social, safety and environmental benefits for the community. Main Roads recognises that Western Australia's environment is significant from a global perspective and the unique conservation values that are contained within its road reserve. Main Roads road network often adjoins natural areas and, in some locations, the reserve itself hosts remnant vegetation with high environmental values. Although the reserves were not established for this purpose, Main Roads recognises that it has a responsibility to conserve the environmental values that occur within the State's road network and minimise the impact its proposals have on the environment. In addition to providing a safe and efficient road network for all people using the roads under its control, Main Roads is also committed to protecting the natural environment.

In accordance with National and State Government road safety policies, Main Roads is also committed to substantially reducing road trauma on the road network through Safe System principles. The Safe System approach acknowledges that more than two thirds of all serious crashes are due to human error rather than deliberate risk taking (e.g. speeding or drink driving) and seeks to improve behaviour through education and enforcement while managing the safety of vehicles, speeds and the road and road infrastructure. It is shown that improving sub-optimal road formation will substantially reduce the likelihood and severity of road crashes. For example, according to the Road Safety Management Guideline, increasing the sealed shoulder from 0.5 m to 2 m will reduce Killed and Seriously Injured numbers by more than 50%.

As the statutory authority responsible for providing and managing a safe and efficient main road network in Western Australia, Main Roads focuses on improving road safety by thoroughly considering all environmental, economic and community benefits and impacts. It operates on a hierarchy of avoiding, minimising, reducing and then, if required, offsetting our environmental impacts. This has been achieved through changes in proposal scope and design. Main Roads regularly reduces its clearing footprint by restricting earthworks limits for proposals, steepening batters, installing barriers, establishing borrow pits in cleared paddocks and avoiding temporary clearing for storage, stockpiles and turn around bays to avoid and minimise its impacts.

Further details on measures to avoid, minimise and reduce are provided in Section 1.5.

1.2 Proposal Scope

This proposal assesses the clearing of up to 30 ha of native vegetation within a 248.6 ha Development Envelope.

The scope of works under this assessment includes:

- Investigation of material areas and select pit development within suitable areas
- Extraction and stockpiling of materials, overburden, topsoil and vegetation.

1.3 Proposal Location

The Development Envelope is located on the Tanami Road between SLK [REDACTED], within the Shire of Halls Creek as shown in Figure 1. The central coordinate of the proposal is -[REDACTED]°, [REDACTED]°.

1.4 Clearing Details

Proposed Clearing to be undertaken using CPS 818:
30 ha.

Areas of Native Vegetation Clearing:
The areas of native vegetation to be cleared are shown in Figure 2.

Note that these areas are indicative only, as the exact clearing area will be dependent on the investigation results but will not exceed the clearing limit proposed or extend outside the Development Envelope.

Type of Native Vegetation:
The type of vegetation to be cleared under this Proposal is comprised of native vegetation across five vegetation types and shown in Figure 2.

[REDACTED]

Figure 1. Clearing Area/Development Envelope

[REDACTED]

Figure 2. Vegetation within Clearing Development Envelope

1.5 Alternatives to Native Vegetation Clearing Considered During Proposal Development

The proposed clearing is required to supply materials to upgrade Tanami Road.

The following alternatives to clearing were considered during the development of the proposal to upgrade the road:

- Preferentially locating the new alignment in cleared pasture areas over the existing road reserve, however this was considered impractical in the regional context as most cleared areas are occupied by existing infrastructure. Location the proposed clearing in these areas would require the existing infrastructure be relocated, nullifying any impact reductions.
- Upgrading other alternative routes that are less vegetated and environmentally constrained, however these are not suitable as there are no viable alternate roads that exist.
- Do not upgrade the road, however this will potentially result in a poorer safety outcome and may result in future fatalities or serious injuries and further degradation of the State road asset.
- Main Roads retains frangible vegetation where a clear zone is to be established for road projects. For this project, however, clearing will only be required to accommodate the road formation, with no clear zone being established. Accordingly, the retention of frangible vegetation does not apply to this proposal.
- Reducing the speed limit to minimise clearing requirements, while still balancing safety (driver fatigue) and freight efficiency. Speed Limits are an essential mechanism to ensure the safe and efficient operation of road networks. The application of appropriate speed limits and other traffic management measures is a key mechanism in managing vehicle speeds to achieve desired safety, mobility, traffic management, local amenity, and road user expectations. There are several factors involved in road safety, including road conditions, driver behaviour and overall road design. Except in special situations, reducing speed limits below national standards on state and national roads is not typically supported as it has the potential to contribute to driver frustration, impatience, tiredness and recklessness. The environmental values protected by reducing the speed limit, do not justify the impacts on freight efficiencies nor road user safety. Accordingly, the reduction of the speed limits to avoid clearing of native vegetation for this proposal is not proposed.
- Sourcing material from existing main roads sources: Several main roads pits exist on the Tanami Road between SLK [REDACTED]. These pits are not considered to be a viable alternative as the material required to supply the project will require further clearing, and in an area with relatively higher vegetation values (better condition vegetation).
- Sourcing material from existing commercial sources: This was not deemed a feasible alternative as commercial operations will be still required to clear native vegetation and the closest commercial operation is located in Fitzroy Crossing, over 300 km from the Project.

1.6 Measures to Avoid, Minimise, Reduce and Manage Proposal Clearing Impacts

The design and management measures implemented to avoid and minimise the potential clearing impacts of the Proposal are provided in Table 1.

Table 1. Measures Undertaken to Avoid, Minimise, Reduce and Manage the Proposal Clearing Impacts

Design or Management Measure	Discussion and Justification
Use of existing cleared areas for access tracks, construction storage and stockpiling	There are limited existing cleared areas within the Development Envelope adjacent to the existing Tanami Road, mainly being fence lines, access tracks and existing gravel pits. Material extraction for most of these areas is limited, as it requires the need for replacement infrastructure and subsequent clearing. However, where existing pits are in place, available material and the existing pit access points have been utilised to access the new material areas that are being developed under this assessment. Refer to **Plate** . The Development Envelope contains a significantly lower proportion of vegetation that is in 'Good' or better condition, as compared to what is available in the immediate surrounds, based on the results of biological surveys carried out between 2020 and 2024. Plate 2 illustrates the relative proportions of various vegetation conditions within the Development Envelope and surveyed areas.
Drainage modification	The Material Areas have been selected to avoid watercourses, reducing the risk of impeding natural drainage patterns. Refer to **Plate** .
Incentives to Minimise Clearing	The Development Envelope was refined from original surveyed areas through a visual inspection by Main Roads Materials Officers. Reductions were made to avoid all populations of Priority Flora and Species of Interest (as seen in Plate 1).

Design or Management Measure	Discussion and Justification

Plate 1: Example of Envelope design and refinement process

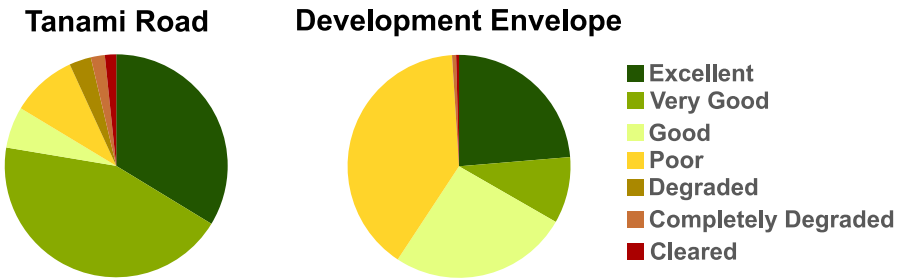


Plate 2: Proportion of vegetation condition between surveyed areas and the Development Envelope.

1.7 Approved Policies and Planning Instruments

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act, Main Roads has also had regard to the below instruments where relevant.

Other Legislation potentially relevant for assessment of clearing and planning/other matters:

- *Biodiversity Conservation Act 2016* (WA) (BC Act);
- *Conservation and Land Management Act 1984* (WA) (CALM Act);
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act);
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act);
- *Planning and Development Act 2005* (WA) (P and D Act);
- *Soil and Land Conservation Act 1945* (WA);
- *Rights in Water and Irrigation Act 1914* (WA) (RIWI Act); and
- *Aboriginal Heritage Act 1972* (WA).

Environmental Protection Policies:

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011.

Other relevant policies and guidance documents:

- Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (DER,2014)
- Procedure: Native vegetation clearing permits (Government of WA, October 2021)
- Environmental Offsets Guidelines (Government of Western Australia, 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities.

2 SCOPE AND METHODOLOGY ASSESSMENT OF CLEARING

Native vegetation will be cleared to accommodate this Proposal. This clearing will be undertaken using the Main Roads Statewide Clearing Permit CPS 818.

To comply with CPS 818, Main Roads must prepare a Clearing Assessment Report (CAR).

The CAR outlines the key activities associated with the Proposal, the existing environment and an assessment of native vegetation clearing. This assessment provides an evaluation of the vegetation clearing impacts associated with the Proposal using the ten Clearing Principles listed under s51 of the *Environmental Protection Act 1986* (EP Act) and strategies used to manage vegetation clearing.

2.1 Report Terminology and Sources

The following terms are used in this Clearing Report:

- **Native Vegetation Clearing Area** – The maximum amount of native vegetation to be cleared for the Proposal that will accommodate the designed earthworks and, typically, a nominal buffer to allow for the safe movement of machinery during construction. The Native Vegetation Clearing Area for this Proposal is 30 ha.
- **Development Envelope** – The maximum extent within which the Clearing Area will be located. This envelope is larger than the Clearing Area and the Proposal Area to allow for minor changes to the Proposal footprint as the design process continues, and to account for minor and unexpected changes that may occur during construction, such as working to avoid a large tree or encountering buried boulders or services. This flexibility allows the site personnel to make modifications to the Proposal to avoid areas that may contain better environmental values. The CAR has assessed all environmental values within the Development Envelope as though all of these values will be impacted, up to the amount specified within the Clearing Area. The Development Envelope for this Proposal is 248.6 ha.
- **Study Area** – Area covered by the Desktop Assessment. The Study Area for the Proposal is confined to a local area of a 40 km radius.
- **Survey Area** – Area covered by the Biological Survey, which is typically larger that the Development Envelope.

2.2 Desktop Assessment

A desktop assessment of the Development Envelope was undertaken by viewing internal datasets and other government agency managed databases, and consulting with relevant stakeholders where necessary.

GIS layer viewing and mapping is done using ArcMap and/or Main Roads corporate mapping system known as iMaps. Referencing of the GIS layers accessed is done under the relevant methodology section of each clearing principle. Government managed databases were searched to locate additional information, which are found under References in Section 10.

2.3 Surveys and Assessments

The following surveys/assessments were undertaken to inform this CAR:

- Detailed and targeted flora and vegetation survey (Biota 2020, 2021, 2023, 2024, 360 Environmental 2021).
- Fauna survey (Biota 2021a, 2021b, 2023, 2024).

Biological and targeted surveys conducted for the proposal are outlined in Table 2 and a summary of the findings in these reports are presented in Sections 3.1 to 3.2.

Approximately 20,000 ha has been mapped in surveys completed for the Tanami Road Upgrade as of 2025.

Table 2. Summary of Biological and Targeted Surveys Relevant to the Proposal

Consultant and Survey Name	Survey Details
Biota Environmental Sciences (2023)	**Survey Area:** Survey Area comprises 4,563 ha on Tanami Road specifically for material areas between SLK [REDACTED]. All three polygons that comprise the Development Envelope for this proposal are fully covered by this survey, which is the primary source for the impact assessment. **Type:** Detailed flora and vegetation survey, targeted flora survey and basic and targeted fauna survey. **Timing:** May 2023 **Survey Results Shapefile TRIM Ref:** D23#913196 **Document TRIM Ref:** D23#913187
Biota Environmental Sciences (2020) Tanami Road Upgrade SLK 0-60 Biological Survey	**Survey Area:** Survey area comprised approximately 1,650.7 ha and a contextual area of 5,951.4 ha (7,602.1 ha including survey area) adjacent along Tanami Road (SLK 0 – 60). This started at the Great Northern Highway (GNH) Tanami intersection and continued for 60 km at varying widths between 200 m and 500 m wide. **Type:** Detailed flora and vegetation survey, targeted flora survey and basic and targeted fauna survey. **Timing:** Fieldwork conducted on from the 23rd of May to 8th June 2020. **Survey Results Shapefile TRIM Ref:** D21#506928 **Document TRIM Ref:** D21#125420
360 Environmental (2022) Tanami Road Upgrade Targeted Flora Survey	**Survey Area:** Nine polygons were surveyed along Tanami Road, totalling 58.2 ha in area. **Type:** Targeted Flora survey for the proposed Tanami Road Upgrade (SLK 0 – 60) within nine areas on Tanami Road. **Timing:** Fieldwork conducted on 21st – 25th May 2021 **Survey Results Shapefile TRIM Ref:** D21#1081780 **Document TRIM Ref:** D21#1081407

Consultant and Survey Name	Survey Details
Biota Environmental Sciences (2021a) Tanami Road Upgrade and Great Northern Highway Material Pit Areas: Flora Survey	**Survey Area:** Survey Area comprises 44.20 ha on Tanami Road and 132.15 ha on GNH. **Type:** Targeted surveys for Priority flora species and other species of interest that were identified as occurring or potentially occurring, during the initial botanical survey in 2020. **Timing:** Fieldwork was conducted on 14th – 25th June 2021 **Survey Results Shapefile TRIM Ref:** D21#1219428 **Document TRIM Ref:** D21#1020020
Biota Environmental Sciences (2024) Draft Tanami Road Upgrades SLK 60-114 Biological Survey	**Survey Area:** Survey Area comprises 3,851 ha with a contextual area of 10,769 ha. The mapping for the southernmost polygon of the Development Envelope was updated as part of this survey. **Type:** Detailed flora and vegetation survey, targeted flora survey and basic and targeted fauna survey. **Timing:** Fieldwork was conducted between 14th April – 3rd May 2024 **Survey Results Shapefile TRIM Ref:** D25#122529 **Document TRIM Ref:** D24#1231391

3 SURVEY RESULTS

3.1 Summary and Analysis of Flora and Vegetation Surveys (Biota 2023)

The "Tanami Road Upgrade SLK [REDACTED] Material Pits Biological Survey" was conducted from the 29 May to 10 June 2023, by Biota Environmental Sciences covering a detailed survey area of 1,085.7 ha and a larger contextual mapping area totalling 4,652.7 ha. The spatial scopes for the biological survey comprised a detailed survey area, a contextual area (400 m buffer around the survey area) and the study area (40 km buffer around the survey area). A desktop flora and fauna assessment were undertaken for the study area, followed by a field survey which comprised a detailed and targeted flora and vegetation survey and a basic and targeted fauna survey of the survey area.

Vegetation

A total of 12 vegetation units were identified from the survey area, associated with drainage lines, plains and hills. None of the vegetation units represent listed Threatened Ecological Communities (TECs), or Priority Ecological Communities (PECs). The vegetation unit P10 shared some similarities to the two tussock grassland communities in the study area that are listed as PECs. Vegetation unit P10 is considered to be of local significance due to comprising of tussock grassland dominated by *Eriachne festucacea* and *Dichanthium fecundum*, however, this vegetation is not listed as a PEC. Two vegetation units from drainage line habitats (D3 and D4) were considered to represent Groundwater Dependent Ecosystems and were also considered to be locally significant.

Flora

A total of 334 native vascular flora species from 150 genera and 52 families were recorded from the survey area. No Threatened flora were recorded. Eight Priority-listed species (the P1 *Goodenia lunata, Pentalepis trichodesmoides* subsp. *incana* and *Portulaca* sp. finely echinate (D.G. Tulloch 41); P2 *Ipomoea racemigera* and *Kohautia australiensis*; and P3 *Glycine falcata, Goodenia crenata* and

Trachymene dusenii) and two species of interest (*Cullen* sp. (TAN-TW07) and *Sida* ? sp. (TAN01-17)) were also recorded from the survey area, representing new populations of these species in the locality. A total of 18 weed species were recorded, including one significant weed species **Calotropis procera* (Calotrope) which is a Declared Plant and was found scattered through plains and drainage lines throughout the survey area.

3.2 Summary and Analysis of Flora and Vegetation Surveys (Biota 2024)

As part of surveys carried out in 2024, the southernmost Development Envelope's mapping was updated. The findings of the survey, as it pertains to the southernmost Development Envelope is detailed below.

Vegetation
The 2024 survey mapped areas of the southernmost Development Envelope as being 'Good-Very Good', a slight improvement to the 2023 survey finding of 'Good'. No changes were noted in relation to vegetation types.

No changes were noted in relation to fauna habitats as a result of vegetation types.

Flora
The 2024 survey identified more extensive populations of a P3 taxa, *Goodenia crenata*, along with a single Species of Interest, *Sida* sp. (TAN01-17). This taxa is not present in the Development Envelope.

For the purpose of impact assessment, the most up to date mapping is used where areas overlapped.

3.3 Summary and Analysis of Fauna Surveys

A combined total of 113 species of vertebrate fauna were recorded, including 19 mammals, 10 bats, 79 birds, 13 reptiles and two amphibians. Two significant fauna species: the Gouldian Finch (*Chloebia gouldiae*) and Freshwater Crocodile (*Crocodylus johnstoni*) were recorded. Likelihood of occurrence assessments based on the desktop study results and an assessment of habitats undertaken during the field survey indicated that a further five significant vertebrate species are likely to occur in the survey area, while 17 may occur. Many of these are noted to be migratory bird species.

Two taxonomic groups with the potential to include short-range endemic (SRE) species were recorded within the survey area (seven mygalomorph spiders and three araneomorph spiders). Three taxa have not been recorded previously and are therefore currently known only from the survey area. Lack of survey effort in the broader locality makes it impossible to draw strong conclusions as to the extent of distribution of these lineages.

Six fauna habitats were described for the survey area, the most well represented being habitat associated with low rolling stony hills, and the least being cracking clay plains and a man made dam. It is worth noting the least representative habitats recorded are the least preferable for material areas.

No additional fauna of significance was found in the southernmost polygon of the Development Envelope as part of the surveys completed in 2024 (Biota, 2024).

4 DESKTOP ASSESSMENT OF VEGETATION

4.1 Desktop Vegetation Description

Table 3 and Table 4 provide details of the vegetation types and their condition within the Development Envelope and the remaining extents of these associations, as recorded from the various surveys carried out on the Tanami Road. For a full description of the existing vegetation, refer to the Biological Survey Report found at D23#913187.

Table 3. Summary of Vegetation Types within the Development Envelope

Type	Description (Biota 2023)	Extent in Surveyed Areas (ha)	Extent in Development Envelope (ha) (% Surveyed Area)	Estimated Impacts (ha) (% Surveyed Area)	Maximum Potentia Impact (ha)* (% Surveyed Area)
Hills					
H4	*Eucalyptus brevifolia* low open woodland over *Triodia* sp. (TAN07-02/34), *T. epactia* open hummock grassland.	189.2	58.85 (31.10%)	0.9 (0.48%)	**30 (15.86%)**
Plains					
P3	*Corymbia opaca, Bauhinia cunninghamii, Atalaya hemiglauca* scattered low trees to low open woodland over *Dichrostachys spicata, Carissa lanceolata* scattered tall shrubs over *Triodia epactia* very open hummock grassland and/or mixed very open tussock grassland.	1486.3	23.9 (1.61%)	1.94 (0.13%)	**30 (1.61%)**
P5	*Corymbia opaca, Eucalyptus brevifolia* scattered low trees over *Triodia intermedia* open hummock grassland	1856.6	64.57 (3.48%)	5.15 (0.28%)	**30 (1.62%)**
P7	*Eucalyptus brevifolia, Bauhinia cunninghamii* scattered low trees to low open woodland over *Dichrostachys spicata, Carissa lanceolata, *Vachellia farnesiana* tall open shrubland over *Triodia intermedia* very open hummock grassland and/or **Cenchrus* spp., *Chrysopogon fallax* open tussock grassland	1183	98.73 (8.35%)	21.48 (1.82%)	**30 (2.54%)**
P8	*Acacia synchronicia, *Vachellia farnesiana, Carissa lanceolata* scattered shrubs to tall open shrubland over *Chrysopogon fallax, Dichanthium fecundum, *Cenchrus* spp. Open tussock grassland	512.6	0.002 (>0.001%)	0 (0%)	**0.002 (>0.001%)**
Disturbed		271.1	1.48 (0.55%)	0.002 (>0.001%)	**1.48** (0.55%)
Cleared		329	1.04 (0.32%)	0.67 (0.20%)	**1.04** (0.32%)
TOTAL (excluding "Disturbed" & 'Cleared' areas)				**30 ha**	N/A

Table 4. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European Extent (ha)	Current Extent (ha)	% Remaining	% Current Extent in DBCA Managed Land (proportion of pre-European Extent)
Veg Assoc No. 837 (197.3 ha)	**Statewide**	172,815.95	172,553.02	99.85%	0%
	IBRA Bioregion Ord Victoria Plain	21,278.563	21,278.56	100%	0%
	IBRA Sub-region South Kimberley Interzone	21,182.37	21,182.37	100%	0%
	Local Government Authority Shire of Halls Creek	151,971.74	151,708.81	99.83%	0%
Veg Assoc No. 847 (24.9 ha)	**Statewide**	71,106.64	71,106.64	100%	60.55%
	IBRA Bioregion Ord Victoria Plain	71,106.64	71,106.64	100%	60.55%
	IBRA Sub-region South Kimberley Interzone	4,632.67	4,632.67	100%	0.19%
	Local Government Authority Shire of Halls Creek	71,106.64	71,106.64	100%	60.55%
Veg Assoc No. 849 (26.4 ha)	**Statewide**	481,753.04	481,753.04	100%	4.05%
	IBRA Bioregion Ord Victoria Plain	459,303.88	459,303.88	100%	4.25%
	IBRA Sub-region South Kimberley Interzone	459,169.85	459,169.85	100%	4.24%
	Local Government Authority Shire of Halls Creek	481,753.04	481,753.04	100%	4.05%

4.2 Fauna Habitats Description

Fauna habitat extents recorded from the Development Envelope is detailed in Table 5.

Table 5. Summary of Fauna Habitat Types within the Development Envelope

Habitat	Description (Biota 2023)	Extent in Surveyed Areas (ha)	Extent in Development Envelope (ha) (% Surveyed Area)	Estimated Impacts (ha) (% Surveyed Area)	Maximum Potential Impact (ha)* (% Surveyed Area)
Fauna Habitats					
RBS	Ridgeline breakaways and scree slopes	233.5	58.85 (25.2%)	0.09 (0.04%)	30 (12.85%)
OSP	Open woodland / shrubland on spinifex grass plains	12809.6	23.93 (0.19%)	1.94 (0.02%)	23.93 (0.19%)
OGP	Open woodland /shrubland on tussock grass plains	654.8	44.59 (6.81%)	9.79 (1.5%)	30 (4.58%)
LOD	Low open degraded plains	938.5	118.71 (12.65%)	16.83 (1.79%)	30 (3.2%)
MMD	Man made dams (artificial waterbodies)	13	0.89 (6.86%)	0.64 (4.96%)	0.89 (6.86%)
Cleared	Cleared / Degraded areas	587	1.62 (0.28%)	0.7 (0.12%)	1.62 (0.28%)
Total				30	-

5 ASSESSMENT AGAINST THE TEN CLEARING PRINCIPLES

In assessing whether the Proposal's proposed clearing is likely to have a significant impact on the environment, the Proposal was assessed against the ten Clearing Principles (EP Act, Schedule 5).

Each principle has been assessed in accordance with the former Department of Environment Regulation (now Department of Water and Environmental Regulation (DWER) '*A Guide to the Assessment of Applications to Clear Native Vegetation*' (Department of Environment Regulation, 2014) and other relevant clearing permit application decision reports prepared by DWER.

The proposed clearing is not likely to be at variance with the ten Clearing Principles.

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Proposed clearing is not likely to be at variance to this Principle.

The following metrics are used as indicators of high biological diversity, as described in DER (2014):

1. Biodiversity hotspots
2. Flora and Fauna species diversity
3. Priority and other Significant Flora
4. Priority Fauna
5. Ecological Community Diversity
6. Significant Ecological Communities
7. Vegetation Condition

An assessment of the Development Envelope against the above metrics has been undertaken to ascertain the level of biological diversity.

1. Biodiversity Hotspots

The proposed clearing is not located in a Biodiversity Hotspot (DER 2014).

2. Flora and Fauna Species Diversity

A total of 334 species of vascular flora and 113 species of vertebrate fauna were recorded in the survey area during biological surveys (Biota, 2023). The Development Envelope has excised all Priority Flora, Threatened Flora, and Species of Interest identified from these surveys (no threatened or priority fauna records are present within the Development Envelope).

Biota (2023) noted the species richness recorded from the survey was consistent with the expected value in comparison to other surveys in the region (higher species richness than two prior surveys but lower species richness than three prior surveys). The total number of species recorded was reflective of the size and shape of the survey area, noting a variety of landform types were included in the survey area (low-lying plains, plains at higher elevation, hill crests, hill slopes and drainage lines).

Species diversity within the areas proposed to be cleared is likely to be overall lower than that of surrounding areas due to the following:

- Nearly all areas of clearing are in close proximity to an existing major road and existing gravel pits that are subject to disturbance and edge effects (as noted in weed data collected by [Biota 2021a]).
- Previous surveys identified there are areas of higher biological diversity in the surrounding areas, notably in the vicinity of Duncan Road, approximately 20 km to the northeast (Biota, 2021c).
- The proposed clearing area does not include drainage landforms which often support a greater diversity of flora and fauna species.

- The proposed clearing areas have been designed to avoid targeting areas containing conservation significant species and therefore, impacting less diverse areas.

Furthermore, the current extent of pre-European vegetation associations within the Development Envelope retains above 99% at all scales (State, IBRA Bioregion, IBRA Subregion and LGA). Species diversity is expected to be higher in areas beyond the Development Envelope that have not been subject to disturbance or indirect impacts from adjacent ground disturbance and clearing activities.

3. Priority and other Significant Flora

No known records of Threatened flora taxa were identified from the project study area, and no Threatened flora were recorded during the biological survey by Biota (2023) nor during any other surveys carried out on the Tanami Road and surrounds (Biota 2021a; 2021b; 2021c; 2024; 360 Environmental 2022, Main Roads Western Australia 2022).

14 priority flora taxa and 12 species of interest have been recorded within 40 km of the Development Envelope (Biota 2021a; 2021b; 2023; 2024; 360 Environmental 2022) however the Development Envelope has been purposely designed to avoid all priority flora and species of interest. This significantly reduced the potential for direct impacts to priority and significant flora.

No other Priority Flora species were considered as likely to or may occur because the surrounding area has been sampled numerous times in recent years (Biota 2021a; Biota 2021b; 360 Environmental 2022; Biota 2023; Biota 2024).

4. Priority Fauna

Three conservation significant fauna species were detected within 40 km of the Development Envelope during Biota's 2021, 2023 and 2024 surveys:

- Gouldian Finch (*Chloebia gouldiae*; Priority 4);
- Freshwater Crocodile (*Crocodylus johnstonii*; Other Specially Protected); and
- Bilby (*Macrotis lagotis*; Vulnerable).

None of these species were detected within the Development Envelope. The assessment below therefore considers the likelihood of occurrence and potential impacts from the proposed clearing.

<u>Gouldian Finch</u>

The Gouldian Finch inhabits savannah woodland on stony hills with eucalypts over dense, tall native grasses; grassy flats, trees by water; vegetation on watercourses; and scrublands with spinifex (Biota 2023). The species was detected 20 km northwest of the Development Envelope during the 2023 survey.

Within the surveyed areas, Biota notes that the Gouldian Finch may use the open woodland with larger eucalypts over spinifex may be used for foraging and potentially breeding LSH and OSP habitats. Assuming all clearing occurs in these two habitats, the maximum impact is 0.14 % of their surveyed extents based on all surveys completed to date. The distribution maps from the ALA and DCCEEW note that this area of the Tanami Road is on the southern edge of their known distribution and is not considered to be core habitat (ALA 2025; DCCEEW 2024b). There is a single record of the species occurring 15 km southeast of the Development Envelope in the DBCA's databases, however this record is likely erroneously mapped. The site of the record is noted as being 'Old Halls Creek' which is located 40 km to the north of the Development Envelope, within areas of more favourable habitat (DBCA 2024c).

Therefore, it is likely that there will be no discernible impacts to the species from the proposed clearing.

<u>Freshwater Crocodile</u>

Freshwater Crocodiles inhabit various freshwater environments including rivers, creeks, pools, billabongs, lagoons and swamps, and occasionally in brackish waters (Australian Museum, 2020). Biota's 2023 survey

recorded this species from the MDL habitat type (major drainage line) within an historical mining dam, disused for over 40 years.

The MDL habitat type does not occur within the Development Envelope. Therefore, it is unlikely that this species would be affected by the proposed clearing.

Bilby

Bilbies occupy a range of habitats across their distribution, including open tussock grassland on uplands and hills, mulga woodland/shrublands on ridges and rises, and hummock grasslands on plains and in alluvial areas, requiring sandy soils suitable for burrowing (DCCEEW 2023).

The Bilby was not detected within the Development Envelope but was recorded in Biota's 2024 survey 14 km south of the southernmost Development Envelope, within the AMS habitat type (*Acacia monticola* tall open scrub sandplain). This habitat type does not exist within the Development Envelope. The AMS patch where Bilby activity was noted was extremely small (100 m x 60 m) and is fully surrounded by an area of OSP habitat type (Open shrubland/woodland on spinifex plains) indicating some potential for transient use (Biota, 2023). The OSP habitat type is the most common habitat present on the Tanami Road; assuming all clearing occurs within the OSP habitat, a negligible amount of habitat will be lost (>0.2 % of surveyed extent).

Therefore, it is unlikely that the species would be impacted by the proposed clearing.

A likelihood of occurrence assessment of all significant species identified in the desktop assessment was undertaken by Biota (2023) based on availability of suitable habitat and previous known records in the study area. Excluding species that were recorded, the assessment indicated that five significant species were considered likely to occur and 18 species may occur within the survey area.

Further details on the fauna species that are assessed as likely or may occur within the Development Envelope are provided in Principle (b). The majority of species identified have broad distributions across inland or northern Australia, making large areas in the East Kimberley potential foraging habitat (see Principle B). The assessment noted that no species were likely to be impacted by the proposed clearing.

The marine and migratory birds identified in the desktop assessment are mostly non-breeding migrants to Australia and breed in the northern hemisphere. These species have a wide range of occurrence across Australia and the extent of suitable habitat within the Development Envelope is very limited.

5. Ecological Community Diversity

Of the 19 ecological communities (vegetation units) recorded during biological surveys on the Tanami Road within 40 km of the Proposal, the proposed clearing has the potential to impact five communities (Table 3). The Tanami Road is a linear infrastructure corridor running approximately north to south, perpendicular to the landforms in the area and therefore intersects numerous vegetation units. As stated above, the impacts to vegetation units will occur primarily in areas adjacent to existing pits or the existing Tanami Road with areas of previous disturbance.

In addition, all the vegetation units within the proposed clearing area are well represented in the survey area. The vegetation unit with the highest level of potential impact is P5, with a maximum of 10.48 % of the total surveyed area to potentially be impacted. This estimate assumes the full extent of this vegetation type within the Development Envelope is cleared. The actual impacts are likely to be lower.

6. Significant Ecological Communities

No Environmentally Sensitive Areas (ESAs) or Threatened Ecological Communities (TECs) were identified in the 40 km radius desktop database searches nor recorded during the field survey by Biota (2023; DBCA 2024d).

The desktop assessment identified four Priority Ecological Communities (PECs) from the project Study Area:

- **P1 - Vegetation Association 872** as defined by John Beard's vegetation mapping for the Kimberley (Beard 1979): Described as **"**Hummock grasslands, sparse tree steppe; snappy gum over hard spinifex *Triodia wiseana* and *T. intermedia* on basalt and dolerite" (DBCA 2021).
- **P3 - Vegetation Association 850** as defined by John Beard's vegetation mapping for the Kimberley (Beard 1979): Described as "Grasslands, tall bunch grass savanna, mitchell & blue grass" (DBCA 2021)
- **P3 - Vegetation Association 834** as defined by John Beard's vegetation mapping for the Kimberley (Beard 1979): Described as "Grasslands, tall bunch grass savanna, mitchell & blue grass" (DBCA 2021)
- **P3 - Gordon land system:** Described as "Low hilly to undulating limestone country on inland and coastal erosional plains" (DBCA 2021).

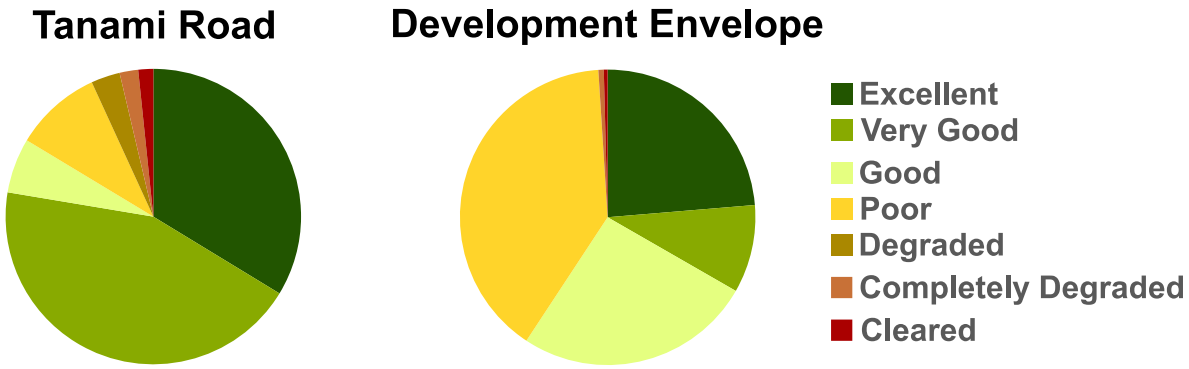
None of the vegetation communities recorded during the Biological Survey carried out by Biota, (2023; 2024) represents TECs or PECs. None of these Vegetation Associations are mapped as occurring within the Development Envelope (Table 3).

7. Fauna Habitat Diversity

Biota (2023) identified nine fauna habitats during the biological survey, of which only five will require any clearing (Table 5). The amount of clearing required is highest for the OSP (open shrubland plains) habitat, with a maximum potential clearing total of 65.47 ha, or 8.69% of the extent mapped by Biota (2023). All of the fauna habitats to be impacted are well represented outside of the Development Envelope and have been recorded from the surrounding areas (Biota 2021a). The proposed clearing is therefore considered unlikely to have a significant impact on local fauna habitat diversity.

8. Vegetation Conditions

The charts below show the proportions of vegetation conditions that are in the Development Envelope, in comparison with that of the surveyed Area (Tanami Road) as recorded by Biota across various years.



**intermediate vegetation conditions assigned to the better condition to reduce number of categories for comparison purposes.*

Evidently, the Development Envelope contains a proportionately higher amount of vegetation in 'Poor' or better condition, as the Development Envelope is situated within landforms that have a higher pastoral potential than on other areas of the Tanami Road

As the local area contains a significantly higher proportion of vegetation in 'Good' or better condition, the Development Envelope is likely to be less diverse than the overall surrounds.

Summary

The proposed clearing is considered not likely to be at variance to this Principle for the following reasons:

- Conservation Significant Flora: will not be impacted by the proposed clearing due to the absence of species in the Development Envelope.
- Conservation Significant Fauna: Two conservation significant species were found in the Survey Area (not the Development Envelope) both of which are unlikely to be impacted by the proposed clearing due to the low levels of habitat loss (a maximum of 0.14% for the Gouldian Finch. 0.2% for the Bilby

and a negligible 0.004% of surveyed extents for the Freshwater Crocodile). Regional mapping indicates that these habitats likely extend significantly beyond the survey area (Biota 2021a).

- Ecological Communities: No TECs or PECs will be impacted as a result of project activities.
- Vegetation and Fauna Habitat Communities: A maximum of 10.48 % and 8.69 % of surveyed extents may be cleared for a single Vegetation community (P5) and fauna habitat (OSP) respectively. Regional mapping indicates that these vegetation types and habitats extend significantly beyond the survey area (Biota 2021a).
- Vegetation Condition: Although a proportionately higher amount of vegetation in 'Good' condition requires clearing, the proportion of vegetation in 'Good' or better condition is significantly lower than that found in the surrounding areas.

Methodology

360 Environmental (2022)
ALA (2025)
Biota (2021a)
Biota (2021b)
Biota (2021c)
Biota (2023)
Biota (2024)DBCA (2021)
DCCEEW (2023)
DCCEEW (2024c)
DCCEEW (2025)
DER (2014)
Government of Western Australia (2019)
Government GIS Shapefiles:
- DBCA (2021)
- DBCA (2024c)

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.

Proposed clearing is not likely to be at variance to this Principle.

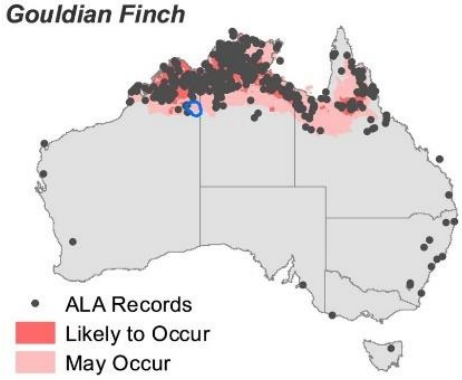
Only five fauna habitat types out of nine recorded by Biota (2021a) will be impacted by the proposed clearing: RBS, OSP, OGP, LOD and MMD (Table 5).

As evident from Table 5, the mapped fauna habitats are widespread throughout the larger survey area and the Development Envelope represents only a small fraction of current extent of each of these habitats. The maximum potential clearing of the RBS habitat (Ridgeline breakaways and scree slopes) is up to 12.85% of surveyed extents assuming all clearing occurs within this habitat type (Biota 2023). All of the fauna habitats to be impacted are well represented outside of the Development Envelope and Surveyed Area (Biota 2023; 2021a). It is highly unlikely that all clearing will be limited to this single habitat type, so the actual impact will likely be significantly lower.

Three conservation significant fauna species were detected within 40 km of the Development Envelope during Biota's surveys, the Gouldian Finch (Priority 4), Freshwater Crocodile and the Bilby (Biota 2021a; 2023; 2024).

Gouldian Finch (P4)

Biota (2023) notes that the Gouldian Finch may use the open woodland with larger eucalypts over spinifex may be used for foraging and potentially breeding (LSH and OSP habitats). Assuming all 30 ha of clearing occurs in these habitats, the maximum potential impact is up to 0.14% of their surveyed habitat extents. It is likely that the species was opportunistically detected due to the nearby presence of a construction water dam currently being used for the Tanami Road Upgrade Project; two individuals were opportunistically recorded at the dam by the author in June 2023.



There is a single record of the species occurring 15 km southeast of the Development Envelope in the DBCA's databases, however this record is likely erroneously mapped. The site of the record is noted as being 'Old Halls Creek' which is located 40 km north of the Development Envelope, within areas of more favourable habitat (DBCA 2024c). The distribution maps from the ALA and DCCEEW note that this area of the Tanami Road is on the southern edge of their known distribution with infrequent records, indicating that the area surrounding the Project is not likely to be considered core habitat (ALA 2025; Birdlife 2022; DCCEEW 2024b).

Based on the above, the proposed clearing is unlikely to impact significant habitat for this species.

Freshwater Crocodile (Specially Protected)

The Freshwater Crocodile occurs primarily in freshwater areas upstream of the tidal influence, occasionally entering brackish tidal areas (Webb et. al. 1987; Swanson 2019). This species was recorded in the Survey Area, but outside the Development Envelope. Suitable habitat does exist in the Development Envelope, comprising the Major Drainage Line and associated tributaries (MDL) habitat type, and Biota postulates that the species could occur wherever there is suitable habitat. There is no MDL habitat within the Development Envelope.

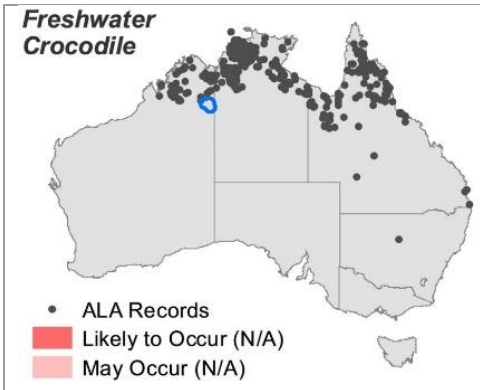


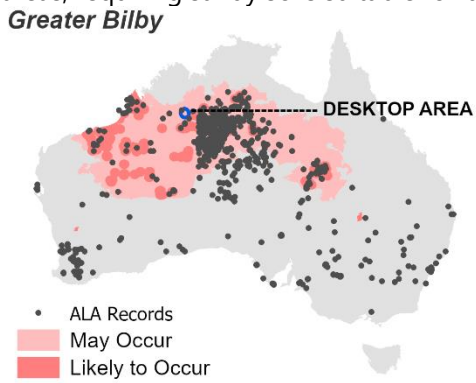
Plate 3 (Google Earth 2025)

The species could opportunistically use the MMD (Man-Made Dam) habitat, as Biota's records were found in a historic artificial water body that now more closely resembles the MDL habitat type. Assuming the species were to use MMD habitat, the maximum loss of potential habitat from the proposed clearing is at most 0.9 ha, less than 7% of that habitat available in the Surveyed Area. The Freshwater Crocodile would occur in more favourable habitat such as habitats associated with drainage lines and nature water bodies, where it was recorded from in Biota's 2023 survey. It should be noted that the only areas of MMD mapped within the Development Envelope is mapped over three existing borrow pits in the southern development envelope which hold water. It is generally considered highly unlikely that these gravel pits would sustain Freshwater crocodile as they are small and recently excavated (Plate 3), though during the wet season when widespread flooding occurs, there may be a small potential for the species to be a transient visitor.

Based on the above, the proposed clearing is unlikely to impact significant habitat for this species.

Bilby

Bilbies occupy a range of habitats across their distribution, including open tussock grassland on uplands and hills, mulga woodland/shrublands on ridges and rises, and hummock grasslands on plains and in alluvial areas, requiring sandy soils suitable for burrowing (DCCEEW 2023).



The Bilby was not detected within the Development Envelope but was recorded in Biota's 2024 survey 3.7 km south of the middle polygon of the Development Envelope, within the AMS habitat type (*Acacia monticola* tall open scrub sandplain). This habitat type does not exist within the Development Envelope. The AMS patch where Bilby activity was noted was extremely small (100 m x 60 m) and is fully surrounded by an area of OSP habitat type (Open shrubland/woodland on spinifex plains) indicating some potential for transient use (Biota 2023). The OSP habitat type is the most common habitat present on the Tanami Road; assuming all clearing occurs within the OSP habitat, a negligible amount of potential habitat will be lost (< 0.2% of surveyed extent).

Based on the above, the proposed clearing is unlikely to impact significant habitat for this species.

A likelihood of occurrence assessment for all significant species identified in the desktop assessment was undertaken by Biota, based on availability of suitable habitat and previous known records in the study area (Biota 2023). Excluding species that were recorded, the assessment indicated that five conservation significant species were considered 'likely' to occur and 18 species 'may' occur within the survey area:

Likely to Occur

- *Apus pacificus* (Pacific Swift)*
- *Glareola maldivarum* (Oriental Pratincole)*
- *Gelochelidon (Nilotica) macrotarsa* (Australian Gull-billed Tern)*
- *Falco hypoleucos* (Grey Falcon)
- *Falco peregrinus* (Peregrine Falcon)

May Occur

- *Macroderma gigas* (Ghost Bat)
- *Vespadelus douglasorum* (Yellow-lipped Cave Bat)
- *Charadrius veredus* (Oriental Plover)*
- *Rostratula australis* (Australian Painted Snipe)
- *Numenius minutus* (Little Curlew)*
- *Calidris acuminata* (Sharp-tailed Sandpiper)*
- *Calidris subminuta* (Long-toed Stint)*
- *Calidris ruficollis* (Red-necked Stint)*
- *Gallinago megala* (Swinhoe's Snipe)*
- *Actitis hypoleucos* (Common Sandpiper)*
- *Tringa glareola* (Wood Sandpiper)*
- *Tringa stagnatilis* (Marsh Sandpiper)*
- *Tringa nebularia* (Common Greenshank)*
- *Chilonidas leucopterus* (White-winged Tern)*
- *Plegadis falcinellus* (Glossy Ibis)*
- *Erythrotriorchis radiatus* (Red Goshawk)
- *Cryptagama aurita* (Gravel Dragon)

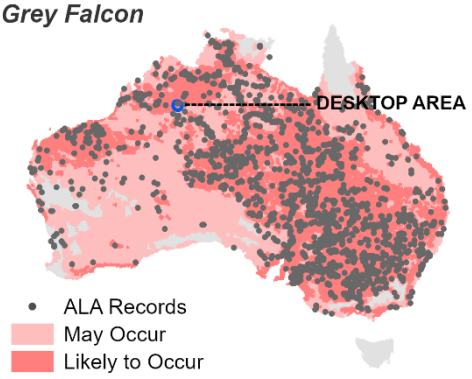
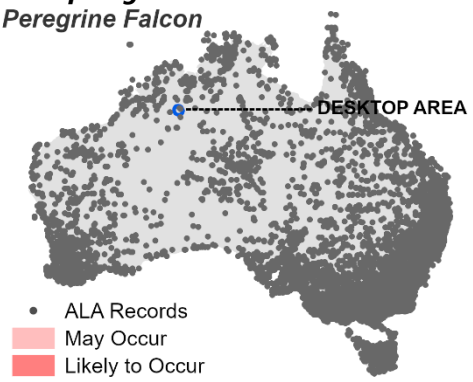
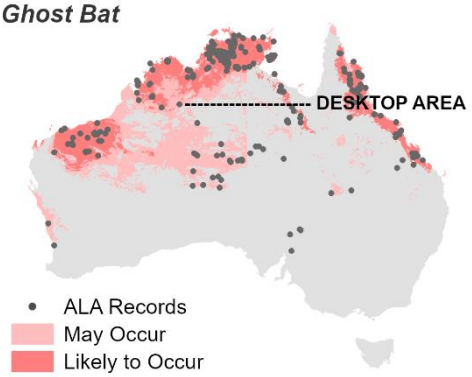
Species marked with an asterisk (*) are migratory and have been discounted from further assessment on the following grounds:

- All species generally occur in coastal, marine or wetland environments, none of which are present in significant amounts within the Development Envelope. 0.9 ha of the MMD habitat type in existing gravel pits may occasionally support these species, however there is significantly more suitable habitat outside the Development Envelope (MMD/MDL; Table 5). Furthermore, the proposed clearing will result in more equivalent habitat from pit activities.
- All species have a broad distribution across most of northern Australia (DCCEEW 2024b). The clearing of 0.9 ha of potential habitat is unlikely to cause any noticeable impact to the species.

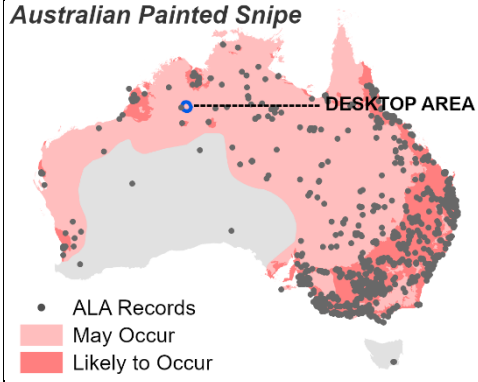
The potential for impacts to species considered likely to occur or may occur is assessed below. Beyond the Survey Areas, habitat estimates are determined from two additional sources:

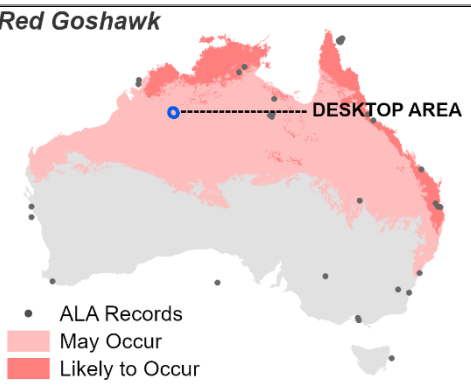
- The Department of Primary Industry and Regional Development (DPIRD) Soil Landscape mapping (Land Systems Units) for statewide and regional extents; and
- The Department of Climate Change, Energy, the Environment and Water (DCCEEW) Species of National Environmental Significance modelled distribution mapping (SNES) for national extents.

Species	Assessment
Falco hypoleucos	There is one record in the Atlas of Living Australia (ALA) database within the Desktop Assessment Area, the collection details of which are unreliable (ALA 2025). Grey Falcon nests usually in the tallest trees along watercourses, particularly River Red Gum (*Eucalyptus camaldulensis*) and Coolibah (*E. coolabah*) (DAWE 2020). No Grey Falcon were detected during biological surveys. They are likely to utilise all of the fauna

Grey Falcon 	habitats within the Development Envelope for foraging, particularly Major Drainage Lines and Associated Tributaries. However, no MDL habitat exists in the Development Envelope. Based on the above, the proposed clearing is unlikely to impact significant habitat for this species.
Falco peregrinus *Peregrine Falcon*  * Distribution mapping not available	There are multiple records of this species in the Desktop Assessment Area from the ALA Database (location unreliable; ALA 2025). This species inhabits a wide range of habitats including forest, woodlands, wetlands and open country and nest in cliff faces, tree hollows and along rivers. The species was not detected during biological surveys. The majority of the Development Envelope consists of foraging habitat, due to the broad habitat preferences of the species. No nesting habitat occurs within the Development Envelope. Though the southernmost Development Envelope is mapped as being RBS (Ridgeline breakaways and scree slopes), the entirety of the DE consists of scree slopes with no notable cliffs which are more common in ridgeline and breakaway landforms (based on aerial Imagery). Therefore, the clearing of 30 ha of only potential foraging habitat within a surveyed area of 20,015 ha of potential habitat is not considered a significant level of impact (all habitats surveyed on the Tanami Road would be potentially suitable foraging habitat).
Macroderma gigas *Ghost Bat* 	There is a single record of this species within the Desktop Assessment area, in 1964 from Palm Springs on the Duncan Road, 27 km to the north east (ALA 2025). The Palm Springs area was surveyed by Biota in 2021 as part of the Duncan Road Project Upgrade, and consists of the MDL habitat type (Biota 2021c). Ghost Bats are known to occur in a broad range of landforms, with distribution influenced by the availability of suitable caves for roost sites (TSSC 2016). The record from Palm Springs was found within the Land Unit of the Wickham System, broadly described as 'Rugged stony country formed on sedimentary rocks widespread in the Ord-Victoria survey area' (Schoknecht and Payne 2011). The Land Systems present within the Development Envelope have considerably less potential for suitable roosting sites, being described as: • Winnecke System: Low linear or rounded hills and associated valley floors; • Geebee System: Lateritic Plains with gravelly red soils;' and • O'Donnell System: Undulating plains and scattered low hills on granite and gneiss.

	On the Tanami Rd, no Ghost Bats nor suitable roost caves for the species were detected during the biological survey despite targeted searches being undertaken (Biota 2023). Biota notes that 'occurrence within the survey area is likely to be dependent on the presence of suitable roost sites in the taller hills outside of the survey area and contextual area'. However, Ghost bats are more likely to forage within the Development Envelope particularly over the RBS habitat type (Ridgeline Breakaways and Scree Slopes) and MDL (Major Drainage Lines) and Associated Tributaries. Of these habitats, only RBS will be cleared, within a scree slope landform type, as evident in aerial imagery. The total mapped suitable foraging habitat is estimated at 456 ha (MDL [not listed] and RBS habitat; Table 5). The maximum amount of suitable habitat in the Development Envelope that could be impacted is 30 ha, amounting to up to 6.6 % of the surveyed habitat extents in the local area. At a broader scale, equivalent habitats to the RBS and MDL habitat types exist throughout the east Kimberley. When considering only the three Land Systems that comprise the Development Envelope, there is an estimated: 408,300 ha of potentially suitable foraging habitat landform types. It should be noted however, that the species has been found in other Land Systems, such as the 1964 record from Palm Springs, within the Wickham System, significantly increasing the area of foraging habitat. Therefore, impacts to this species from the 30 ha of maximum clearing is considered negligible.
Vespadelus douglasorum ***Yellow-lipped Cave Bat***  * Distribution mapping not available	There are two historical records of the species collected in 1965 20 km from the project location. They are restricted to the Kimberley region with the Desktop Assessment Area being the southernmost extent of records (ALA 2025), mostly associated with areas of rainfall greater than 800 mm per annum (Australian Museum 2021). They utilise caves in both sandstone and limestone, typically near water. Typical habitats from which the species has been recorded include melaleuca and pandanus-lined waterways and adjacent open woodlands. This species was not detected during the analysis of the ultrasonic sound recorders deployed during the survey (Biota 2023). No core roosting habitats (caves) occur within the survey area, and Biota notes that 'occurrence within the survey area is likely to be dependent on the presence of suitable roost sites in the taller hills outside of the survey area and contextual area' (Biota 2023). Taller hills that may provide suitable roosting habitats do occur outside the survey area and as such, the Development Envelope may contain some marginal foraging habitat.

	The Development Envelope is located in an area with an estimated 400-600 mm annual rainfall, while just to the north, areas with 600-1000 mm exist, likely explaining the two records noted historically (BOM 2025). The records to the north were found within the Wickham Land System, broadly described as 'Rugged stony country formed on sedimentary rocks widespread in the Ord-Victoria survey area' (Schoknecht and Payne, 2011). The rugged sandstone gorges and escarpments provide the potential for both suitable roosts and consistent water sources, from deeply incised pools, creeks, gorges and springs. The Land Systems present within the Development Envelope have considerably less potential for suitable roosting sites and consistent water, being described as: • Winnecke System: Low linear or rounded hills and associated valley floors; • Geebee System: Lateritic Plains with gravelly red soils' and • O'Donnell System: Undulating plains and scattered low hills on granite and gneiss. Therefore, based on the lack of potential habitat and the availability of suitable habitat further north, this species is unlikely to be impacted from the proposed clearing.
Rostratula Australis *Australian Painted Snipe* 	The Australian Painted Snipe occurs in freshwater (occasionally brackish) wetlands, generally with a good cover of grasses, rushes, reeds, low scrub, open timber or samphire (TSSC 2013). There are no records within the Desktop Assessment Area, with the closest being 60 km to the east along the Margaret River. It is unlikely that the Development Envelope would provide any suitable habitat for the following reasons: • The only habitat present that could remotely represent a wetland environment is the MMD (Man-made Dam) habitat found within the southernmost development envelope, totalling 0.9 ha. • The MMD habitat within the Development Envelope is associated with recently developed gravel pits that are devoid of vegetation (mapped as Completely Degraded or Cleared). • There are areas of significantly more suitable habitat in the surrounding area, such as at Sturt Creek which drains into Lake Gregory, a location with confirmed historical records of the species.
Erythrotriorchis radiatus	The Red Goshawk is found in a variety of habitats across Northern Australia; foraging habitat is noted as being coastal and sub-coastal tall open forests and woodlands, tropical savannas traversed by wooded or forested creeks and rivers, freshwater wetlands and margins as well as the edges of rainforests. Breeding habitat is generally described as areas

Red Goshawk 	with large, tall trees (>14 m) within proximity to a watercourse (TSSC 2023). The species has not been detected on the Tanami road during the 2023 survey nor during any other surveys carried out by Main Roads. The habitats present in the Development Envelope, mainly RBS (ridgeline breakaways and scree slopes, OGP (open woodland/shrubland on tussock grass plains) and LOD (low open degraded plains) do not specifically meet the TSSC habitat criteria. RBS and LOD are not considered as foraging nor breeding habitat, while the OGP habitat type is representative of sub-tropical savanna. No Red Goshawks were recorded during the 2023 or any other surveys. Biota notes that there is potentially suitable foraging habitat in the MDL (major drainage line) and LSH (open woodland on low rolling hills habitats; Biota 2023). None of these habitat types exist in the Development Envelope (Table 5). Based on the above, the proposed clearing is unlikely to impact significant habitat for this species.
Cryptagama aurita ***Gravel Dragon***  * Distribution mapping not available	There are two historical records of the species approximately 20km from the Project Development Envelope collected in 1979. The species is known to occur in the north-eastern interior of WA and in the adjacent Northern Territory and has only been recorded on stony gibber soils with spinifex (Wilson and Swan 2021). This species was not recorded during the biological surveys. Biota notes that there is potentially suitable habitat in certain areas of the MDL (major drainage line) and LSH (open woodland on low rolling hills habitats; Biota 2023). None of these habitat types exist in the Development Envelope (Table 5). The soils within the Development Envelope are described as (Schoknecht and Payne 2011): • Winnecke System: Unit 2 (gently sloping valley floors) – cockatoo – deep red sandy soil; • Geebee System: Unit 2 (gently lower slopes) – brown sandy loam merging into dark red clay over laterites. • O'Donnell System: Unit 3 (interfluves) – reddish sandy and loamy skeletal soils with shallow brownish sands and loams over red clay. Given the lack of suitable habitat within the Development Envelope (consisting mostly of gravel or loamy clay/sands), this species is not likely to be affected by the proposed clearing.

As detailed above, the proposed clearing of 30 ha within five fauna habitats will not result in the loss of a significant part of habitat for any conservation significant species that were recorded or deemed as likely to occur. Therefore, the clearing is not likely to be at variance to this Principle.

Methodology

Atlas of Living Australia (2025)
Australian Museum (2021)
Biota (2021a)
Biota (2023)
Biota (2024)
BOM (2025)
DAWE (2020)
DCCEEW (2023)
DCCEEW (2024b)
DCCEEW (2025)
DoEE (2018)
Google Earth 2025
Government GIS Shapefiles:
- Threatened and Priority Fauna (DBCA-037) (Restricted) (Accessed15/01/2025)

Schoknecht and Payne (2011)
TSSC (2013)
TSSC (2016)
TSSC (2023)
Wilson and Swan (2021)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.

Proposed clearing is not at variance to this Principle.

The Desktop Database Searches (Main Roads ArcGIS files and PMST report) identified no known records of threatened flora listed under the *Biodiversity Conservation Act 2016* from the project 40 km radius desktop search.

The Biological Surveys undertaken by Biota (2023; 2024) and other surveys in the locality did not record any threatened flora taxa (Biota 2021a; 2021b; 360 Environmental 2022; Main Roads Western Australia, 2022).

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

360 Environmental (2022)
Biota (2021a)
Biota (2021b)
Biota (2023)
Biota (2024)
DCCEEW (2025)
Government GIS Shapefiles:
- Threatened Flora (TPFL) (DBCA - Restricted) (Accessed 15/01/2025)
- Threatened Flora (WAHerb) (DBCA - Restricted) (Accessed 15/01/2025)

Main Roads Western Australia (2022)

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Proposed clearing is not at variance to this Principle.

Assessment

The Desktop database searches (PMST report and DBCA Shapefiles) show no known records of Threatened Ecological Communities (TECs) from within the project 40 km radius desktop search (DBCA 2024d; DCCEEW, 2025).

Vegetation communities recorded during the Biological Surveys carried out by Biota are not representative of TECs (Biota 2023; 2024).

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

Biota (2023)
Biota (2024)
DCCEEW (2025)
Government GIS Shapefiles:

- DBCA (2024d)
- TEC_PEC_Boundary (DBCA – restricted) (Accessed 15/01/2025)

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Proposed clearing is not at variance to this Principle.

As evident from Table 34, the current extent of pre-European remnant vegetation is more than 30% "National Threshold Level" at all scales (State, IBRA Bioregion, IBRA Subregion and LGA). All of the vegetation associations have greater than 99% of their pre-European extent remaining intact. As such, the project is not located in an area of regionally significant remnant vegetation. Given that the vegetation associations are widespread throughout the area and are well-represented locally and regionally, impacts due to project clearing are not likely to be significant.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

Government of Western Australia (2019)

- Government GIS shapefiles:
  - Pre-European Vegetation (DPIRD-006) (Accessed 25/01/2025)

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Proposed clearing is not at variance to this Principle.

The Development Envelope does not contain any vegetation that has been identified as growing in, or in associated with, an environment associated with a watercourse or wetland (Biota 2023; 2024).

Additionally, no mapped watercourses exist within the Development Envelope (GIS Database).

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

- Biota 2023)
- Biota (2024)
- Government GIS shapefiles:
- Crossman and Li (2015) (Accessed 16/01/2025)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045) (Accessed 15/01/2025)
- Hydrography, linear (DWER-031) (Accessed 16/01/2025
- Ramsar Sites (DBCA-010) (Accessed 16/01/2025)

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Proposed clearing is not likely to be at variance to this Principle.

The project is in an area naturally prone to severe rainfall events, which could contribute to land degradation via flooding and heavy runoff. However, the 30 ha of proposed clearing is likely to be distributed over three discrete sites, limiting the size of cleared areas and reducing the likelihood of land degradation, noting that several of the material pit locations are based around areas of existing pits.

Furthermore, works occur within a region where close to 100% of pre-European native vegetation extent remains and within an area mapped as cq(p4) - Extremely Low Probability of Occurrence of ASS (CSIRO, 2014).

As clearing works will be completed in dry periods and no excavation below the groundwater table will occur, impacts to groundwater and interruption of natural surface water flows is not expected. As such the risk of the project causing appreciable land degradation is minimal.

The majority of clearing is expected to take place within the following Land Systems:

- Winnecke System: Low linear or rounded hills and associated valley floors;
- Geebee System: Lateritic Plains with gravelly red soils; and
- O'Donnell System: Undulating plains and scattered low hills on granite and gneiss.

The Dockrell and Geebee Systems are considered to have a low or very low susceptibility to erosion, according to rangeland surveys carried out by the then Department of Agriculture and Food WA (Shocknecht and Payne, 2011).

The O'Donnell System is on the whole, considered to have a moderate susceptibility erosion, owing to the occurrence of extensive areas of cracking clay plains, drainage systems, and interfluves with loamy, sandy soils over clays. Schoknecht and Payne estimate that around 76% of the Land System area is comprised of these 'Land Units' (2011). However, the proposed clearing occurs in a less extensive Land Unit characterised by hills and ridges where outcrops with limited areas of shallow gravelly skeletal soils occur, the target soil type for road building materials. These soil types are less susceptible to erosion and as such, the proposed clearing is not expected to cause appreciable land degradation.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

CSIRO (2014)
Government GIS Shapefiles:

- CSIRO ASRIS Acid Sulfate Soils (Accessed 16/01/2025)

Schoknecht and Payne (2011)

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Proposed clearing is not at variance to this Principle.

The Development Envelope is not located within, adjacent to or nearby any conservation area (GIS Database). The Ord River Regeneration Reserve, an area of DBCA-managed Conservation Estate established to revegetate a degraded portion of the Ord River catchment and reduce downstream siltation, is the closest conservation area, and is located more than 12 km from the Development Envelope. The Regeneration Reserve will not be impacted by the proposed activities. Given the distance to the nearest conservation area, the removal of 30 ha of vegetation across three discrete sites, in a region where close to 100 % of pre-European levels of native vegetation remains, the clearing will not impact any buffers, ecological linkages or outliers to a conservation area, and subsequently not impact the environmental values of nearby conservation areas.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology

Government GIS Shapefiles:

- DBCA Legislated Lands and Waters (DBCA-011) (16/01/2025)

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Proposed clearing is not likely to be at variance to this Principle.

The Development Envelope falls entirely within the Sturt Creek catchment which is not a Proclaimed Area under RIWI Act (GIS Database). The amount of clearing required is a very small proportion of the total catchment size of over 70,000km^2 within Western Australia alone (the Sturt Creek catchment crosses over into the Northern Territory) which is therefore unlikely to have significantly impact surface water quality. The Halls Creek Water Reserve, a Public Drinking Water Source Area is located 38 km north-east of the project and is unlikely to be impacted.

Clearing of native vegetation will not intersect any large surface water bodies or mapped watercourses (GIS Database).

The clearing of 30 ha across three separate locations within a wider 248.6 ha Development Envelope further reduces the likelihood of the deterioration in the quality of surface water.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

Government GIS Shapefiles:

- Public Drinking Water Source Areas (DWER-033) (16/01/2025)
- DWER Hydrographic Catchments (DWER -028) (16/01/2025)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Proposed clearing is not likely to be at variance to this Principle.

The subregional climate is described as dry winter and hot semi-arid summer with an average annual rainfall of 468.2 mm (Ruby Plains (Site ID- 2026) (BOM 2025)). Extreme weather events are a significant component of the Kimberley climate. Tropical cyclones and tropical storms can bring heavy and sustained rainfall, particularly in the months leading up to and during the wet season. It is common for a large proportion of the region's rainfall to be recorded in one single event, leading to extensive flooding of rivers, creeks and roadways.

The climatic conditions are the main factor influencing flooding in the region. The proposed clearing of 30 ha of clearing distributed across three isolated sites (pit areas) will be undertaken during dry conditions and is unlikely to cause or exacerbate the incidence or intensity of flooding.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

BOM (2025)

6 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum.

7 REHABILITATION, REVEGETATION AND OFFSETS

7.1 Revegetation and Rehabilitation

No temporary clearing will be undertaken as part of the Proposal activities and therefore no revegetation or rehabilitation will be conducted under CPS 818.

7.2 Offset Proposal

No offset proposal is required as the proposed clearing will not result in significant residual impacts to native vegetation within the region.

8 STAKEHOLDER CONSULTATION

Main Roads will undertake stakeholder consultation in accordance with CPS 818 Condition 8.

9 COMPLIANCE WITH CPS 818

Table 5 summarises what further pre-clearing impact assessment is required in accordance with CPS 818.

Table 5. Summary of Additional Management Actions Required by CPS 818

Impact of Clearing	Yes/No or NA	Further Action Required
1. The CAR indicates that the clearing is 'At Variance' or 'May be at Variance' with one or more of the Clearing Principles.	**No**	No further action required.
2. Clearing is at variance or may be at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality **or** (j) the incidence of flooding.	**No**	No further action required.
3. Clearing is at variance with Clearing Principle (g) land degradation, (i) surface or underground water quality **and** (j) the incidence of flooding.	**No**	No further action required.
4. The Proposal involves clearing for temporary works (as defined by CPS 818).	**No**	No further action required.
5a. Proposal is within a Region that: • has rainfall greater than 400mm; and, • is South of the 26th parallel; and, • works are necessary in 'Other than dry conditions'; and, • works have potential for **uninfested** areas to be impacted.	**No**	Standard Vehicle and Plant management actions from Annexure 204B (TABLE 204B.9.1), Hygiene Checklists *(D17#859669)* and Vehicle, Plant and Machinery Hygiene Register Template *(D23#179551)* will be applied.
5b. Do the proposed works require clearing within or adjacent to DBCA managed lands in non-dry conditions?	**No**	No further action required.

Impact of Clearing	Yes/No or NA	Further Action Required
6. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback.	**No**	No further action required.
7. Weeds are likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition.	**No**	No further action required.
8. Did an environmental specialist conduct the survey or field assessment?	**Yes**	The Environmental Specialist undertaking the biological assessments was suitably qualified and had more than three years' experience.
9. Did an environmental specialist prepare the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal?	**Yes**	The Environmental Specialist preparing the Assessment Report and any other associated documentation including the VMP, Dieback Management Plan or Offset Proposal was suitably qualified and had more than three years' experience.

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