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Chapter 10

Fauna

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Genex Kidston Connection Project - Ministerial Infrastructure Designation Assessment Report

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10.0 Fauna

10.1 Existing Environment

This chapter provides an assessment of fauna values associated with the Project. References to the Preferred Alignment in this Chapter refer to the entire Project (i.e. transmission line and Mount Fox switching station). Detailed ecology survey reports are provided in Appendix D, and summarised within this Chapter.

10.1.1 Methodology

Fauna values associated with the Preferred Alignment have been assessed through a range of methodologies. Methodologies employed include the following.

- Desktop assessment to characterise and identify potential fauna species and their habitat that may be present within the Preferred Alignment. The desktop assessment included a review of literature, and searches of publicly available datasets and online mapping.
- Field surveys to undertake habitat assessments, and target conservation significant species present or likely to be present within the Preferred Alignment. Four surveys targeting fauna values have been undertaken. The baseline sampling of fauna species was undertaken using standard methodologies for the systematic survey of terrestrial fauna in Queensland as well as a number of non-standard observational methods. Methods employed during the field program included fauna habitat assessments; active searches; microchiropteran bat call detection; camera traps; spotlighting; visual and auditory identification surveys of birds; and incidental observations.
- Additional fauna field assessments have since been completed in August 2021, targeted to this section of the Preferred Alignment that was previously unable to be accessed. Methodology and results used in the August 2021 assessments can be provided in a supplementary report if requested.
- A likelihood of occurrence assessment for conservation significant fauna species identified during the desktop review was undertaken. The assessment considered known habitat and ecological requirements of the conservation significant species against the vegetation communities and habitat values identified in the field surveys.
- Potential habitat maps for the conservation significant fauna species identified as having a likelihood presence of ‘high’ or ‘known’ have been created to identify potential habitat across the Preferred Alignment.

Further detail on methodology is provided within the full ecology survey reports in Appendix D.

The Preferred Alignment in this location traverses the Kidston Mining Lease (ML3347) held by Genex. The site is heavily disturbed due to previous mining activity, and the Fauna values are limited. Fauna values associated with this short connection are therefore not considered further in this chapter.

A significant residual impact assessment for MNES and MSES in accordance with both the Commonwealth and State criteria has been undertaken and is discussed in Chapter 11 Matter of Environmental Significance.

10.1.2 Fauna Habitat Types

Nine dominant habitat types were recorded across the Preferred Alignment as listed in Table 10-1 and illustrated in Figure 8 in Appendix D.

Table 10-1 Fauna Habitat Types

Habitat No.	Habitat types	Analogous REs
1	Open *Eucalyptus* woodland on alluvium or sand plains	9.3.3, 9.3.3a, 9.3.5, 9.3.6a, 9.3.16, 9.3.20, 9.3.22a, 9.5.3, 9.5.11

Habitat No.	Habitat types	Analogous REs
2	Open *Eucalyptus*, *Casuarina* and *Melaleuca* riparian woodland	9.3.1, 9.3.13
3	Native grassland	9.3.25, 9.8.13
4	Low open forest of *Acacia shirleyi* and *Eucalyptus persistens* on laterite	9.7.1, 9.7.2
5	Open woodland of *Eucalyptus* and *Corymbia* on basalt	7.8.7, 7.8.18, 9.8.1, 9.8.4
6	Woodland of *Eucalyptus* and *Corymbia* on metamorphic hills	9.11.1a, 9.11.2a, 9.11.5, 9.11.15a, 9.11.16, 9.11.23b
7	*Eucalyptus and Corymbia w*oodland on igneous hills and/or granite	7.12.29, 9.12.1a, 9.12.6c, 9.12.10, 9.12.12, 9.12.16, 9.12.26, 9.12.32
8	Cleared areas	Non-remnant
9	Farm dams	Non-remnant

10.1.3 Essential Habitat

The eastern end (Mount Fox end) of the Preferred Alignment intersects an area mapped as essential habitat for the Sharman's rock-wallaby (*Petrogale sharmani*) (Figure 6 of Appendix D). Essential habitat for the black-throated finch (southern) (*Poephila cincta cincta*) and the short-beaked echidna (*Tachyglossus aculeatus*) also occurs close to the Preferred Alignment.

10.1.4 Conservation Significant Fauna

The desktop assessment identified 54 conservation significant fauna species with the potential to occur within the Preferred Alignment. This included 32 EPBC Act listed species, 23 EPBC Act migratory species, 29 NC Act listed species, and 24 NC Act listed special least concern species.

The likelihood of occurrence assessment determined 18 conservation significant fauna species and 14 migratory species that are known, likely or have potential to occur within the Preferred Alignment, based on the fauna and habitat observed during the field surveys (Table 10-2).

These species include 15 species listed under the EPBC Act, 14 listed as EPBC Act migratory species, and 17 species listed under the NC Act. A complete likelihood of occurrence assessment is provided in Appendix D.

Table 10-2 Fauna Likelihood of Occurrence Assessment Results

Species	EPBC Act Status	NC Act Status	Likelihood of Occurrence in the Study Area
Birds			
Australian painted snipe *Rostratula australis*	Endangered	Vulnerable	Potential
Black-throated finch (southern) *Poephila cincta cincta*	Endangered	Endangered	Likely
Curlew sandpiper *Calidris ferruginea*	Critically Endangered, Migratory	Endangered	Potential
Grey falcon	Vulnerable	Vulnerable	Potential

Species	EPBC Act Status	NC Act Status	Likelihood of Occurrence in the Study Area
Falco hypoleucos			
Masked owl (northern) *Tyto novaehollandiae kimberli*	Vulnerable	Vulnerable	Likely
Red goshawk *Erythrotriorchis radiatus*	Vulnerable	Endangered	Potential
Squatter pigeon (southern) *Geophaps scripta scripta*	Vulnerable	Vulnerable	Known
White-throated needletail *Hirundapus caudacutus*	Vulnerable, Migratory	Special Least Concern	Likely
Mammals			
Chestnut dunnart *Sminthopsis archeri*	-	Near Threatened	Potential
Ghost bat *Macroderma gigas*	Vulnerable	Endangered	Potential
Greater glider *Petauroides volans* *Northern greater glider* *Petauroides minor*	Vulnerable	Vulnerable	Known
Koala *Phascolarctos cinereus*	Vulnerable	Vulnerable	Likely
Northern quoll *Dasyurus hallucatus*	Endangered	-	Likely
Sharman's rock-wallaby *Petrogale sharmani*	Vulnerable	Vulnerable	Known
Short-beaked echidna *Tachyglossus aculeatus*	-	Special Least Concern	Known
Spectacled flying-fox *Pteropus conspicillatus*	Endangered	Vulnerable	Potential
Reptiles			
Common death adder *Acanthophis antarcticus*	-	Near Threatened	Potential
Yakka skink *Egernia rugosa*	Vulnerable	Vulnerable	Potential
Migratory species			
Fork-tailed swift *Apus pacificus*	Migratory	Special Least Concern	Likely

Species	EPBC Act Status	NC Act Status	Likelihood of Occurrence in the Study Area
Oriental cuckoo *Cuculus optatus*	Migratory	Special Least Concern	Likely
Black-faced monarch *Monarcha melanopsis*	Migratory	Special Least Concern	Potential
Spectacled monarch *Monarcha trivirgatus (Syn. Symposiachrus trivirgatus)*	Migratory	Special Least Concern	Potential
Satin flycatcher *Myiagra cyanoleuca*	Migratory	Special Least Concern	Potential
Rufous fantail *Rhipidura rufifrons*	Migratory	Special Least Concern	Potential
Common sandpiper *Actitis hypoleucos*	Migratory	Special Least Concern	Potential
Sharp-tailed sandpiper *Calidris acuminata*	Migratory	Special Least Concern	Potential
Red-necked stint *Calidris ruficollis*	Migratory	Special Least Concern	Potential
Caspian tern *Hydroprogne caspia*	Migratory	Special Least Concern	Potential
Common greenshank *Tringa nebularia*	Migratory	Special Least Concern	Potential
Glossy ibis *Plegadis falcinellus*	Migratory	Special Least Concern	Known

10.2 Potential Impacts

The following section details the potential impacts to fauna values within the Preferred Alignment. The greatest risk of potential impact on ecological values from the Project will occur during the construction phase. The construction activities to support the installation of switching station, transmission towers, associated lines and access tracks will involve vegetation clearing, excavation and ground reinstatement. Direct and indirect impacts potentially associated with this are described below.

Vegetation clearing is a direct impact that can result in the loss of vegetation values and habitat, with the severity of impacts more pronounced in habitats that provide values for conservation significant species and communities. Potential impacts resulting from clearing native vegetation can include the following.

- Reduced patch size of vegetation communities potentially compromising the viability of the community and associated habitat.
- Loss of habitat causing a reduction of biological diversity or loss of local populations and genotypes.
- Loss of or disturbance to microhabitat features such as tree hollows, leaf litter, ground timber, dense shrubs and hollows.
- Fragmentation of habitats resulting in reduced dispersal opportunities for fauna.
- Destruction of abiotic features necessary to support vegetation communities and habitat types.

Clearing of vegetation can result in injury or mortality of fauna, particularly ground dwelling fauna (e.g. the Squatter pigeon (southern) (*Geophaps scripta scripta*)), that may be crushed by machinery or struck by vehicles. Arboreal mammals (such as the Koala (*Phascolarctos cinereus*)) may be trapped in trees as they are felled.

During the construction phase, there will be an increase in noise and activity in the Preferred Alignment as machinery undertakes clearing and access, foundations, tower erection and line stringing activities. It is important to note that these potential impacts will not affect the entire Preferred Alignment simultaneously nor will they persist in any one area for a considerable period of time (months). However, when activity and noise is occurring in areas adjoining retained habitat, potential impacts may include the following.

- Reduced foraging ability by auditory predators due to increased background noise.
- Increased risk of predation by visual predators due to increased background noise.
- Increased potential for collisions with vehicles.
- Human visitation causing disturbance to foraging or breeding behaviours.

Current research indicates that there are no government policies or other widely-accepted guidelines in respect to the noise levels which may be acceptable to wildlife. The levels or character of noise that may “startle” or otherwise affect the feeding or breeding pattern of birds or other wild animals are also not firmly established in the technical literature.

Sudden loud, impulsive or impact noises are capable of causing birds and other fauna to become startled, which if occurring over the longer term, may affect feeding and breeding behaviour in some species. It is expected that excavation, construction and earthmoving associated with the Project will potentially cause disturbance to all groups of fauna, especially birds. This will most likely result in avoidance of the area for the duration of these activities.

10.3 Mitigation and Management Measures

To mitigate potential impacts to potentially occurring Fauna values, an Environmental Management Plan (Appendix B) has been developed for the Project. The following sections further describe mitigation and management measures.

- Prior to construction, the occurrence and extent of conservation significant species habitat will be identified and delineated.
- Exclusion areas will be delineated to avoid unauthorised disturbance and access of areas of threatened species habitat.
- When siting infrastructure, existing breaks between patches of potential conservation significant species habitat will be utilised as much as practical to minimise habitat fragmentation.
- Movement within the Preferred Alignment will be via approved access tracks only with speed limits enforced. The requirement to enter and traverse the Preferred Alignment will be minimised where possible and limited to those required for essential Project activities.
- All clearing will be conducted with a suitably qualified spotter catcher present.
- In areas of conservation significant species, spotter-catchers will scout the area to be disturbed for the presence of fauna species immediately prior to the commencement of disturbance and relocate the fauna to an undisturbed location.
- Where approved, Powerlink or the construction contractor may extract water from select farm dams for construction purposes. Water will only be taken where available supplies provide continuity of habitat function and quality.
- Exclusion zones will be established around identified active breeding places and any fauna habitat features to be retained (e.g. mature trees, inactive breeding places) and appropriately marked out. Where there is the potential an active breeding place will be tampered with, this will only be done in accordance with an approved low-risk and/or high risk DES Species Management Plan (SMP) (depending on the species to be impacted).
- Night works within or adjacent to areas of potential conservation significant species habitat will be avoided where possible. Where night works are required, lights will be directed to minimise light spill into adjacent habitats.
- Construction activities that may result in loud sudden noise will be not permitted in proximity to areas determined to contain potential breeding habitat for threatened fauna species.
- Microhabitat features such as large fallen logs will be relocated to adjacent areas of undisturbed vegetation prior to vegetation clearing where practicable.
- Threat of wildfire caused by Powerlink activities will be minimised through maintenance of firebreaks around ignition sources as appropriate.
- Weed and pest management strategies to be implemented for controlling the spread of weeds and pests, particularly vehicles traversing the Preferred Alignment. This includes:
    - Pre-construction and post-construction weed surveys will be undertaken within the Preferred Alignment.
    - Clean down protocols are required for any vehicles or machinery entering and leaving the Preferred Alignment.
    - Ongoing monitoring of the Preferred Alignment to identify any new incidence of weed and pest infestation.
- Disturbed areas will be assessed and progressively rehabilitated in accordance with a Rehabilitation Monitoring Plan to be developed prior to construction.