

Prepared for
Australian Rail Track Corporation Ltd
ABN: 75 081 455 754



Environment Report

Appendices

Inland Rail - Beveridge to Albury

Appendix E

MNES Significant Impact Assessment

Appendix E MNES Significant Impact Assessment

The Project will have a residual impact on some MNES despite implementation of avoidance and mitigation measures. As such, an assessment against the significant impact criteria has been undertaken for the threatened ecological communities and threatened species on which impacts cannot be completely avoided. The significant impact assessment (SIA) for those species and communities is provided below.

Threatened ecological communities

An assessment of impacts against the significant impact criteria for endangered or critically endangered ecological communities in *Matters of National Environmental Significance Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999* (DoE, 2013) is presented in Table 60 has been completed for GBGW. DAWE have considered the specific nature of impacts of this project and advised that a significant impact is unlikely for WBYBRGW therefore a SIA has not been completed for this threatened ecological community.

Significant impact assessment – GBGW

Table 60 Significant impact assessment – Grey Box Grassy Woodland TEC

Significant impact criteria for critically endangered and endangered ecological communities (DoE 2013)	Criteria met?	Assessment
<i>An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility it will:</i>		
Reduce the extent of an ecological community	Yes	6.334 ha of GBGW will be impacted by the Project. Based on the modelled extent of the community of 343,641 ha remaining in Victoria (TSSC, 2020), this impact would be a reduction in extent of GBGW by
Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines	Yes	Fragmentation of the community will occur as clearing will disrupt of patches of continuous GBGW within the rail corridor and other impact areas.
Adversely affect habitat critical to the survival of an ecological community	No	The loss of these areas is unlikely to be critical to the survival of the community.
Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns	No	Abiotic factors are not predicted to be impacted by the design or works. Groundwater was not a preferred option for water supply for the Project and, where track lowering is proposed, there is a low risk of material adverse impacts to groundwater beneficial use (i.e. GDEs). Clearing will be localised and will not impact on the entire ecological community's survival.
Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting	No	A substantial change to existing species composition is not anticipated as a result of clearing and through implementation of controls such as weed hygiene.

Significant impact criteria for critically endangered and endangered ecological communities (DoE 2013)	Criteria met?	Assessment
<p>Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:</p> <ul style="list-style-type: none"> • assisting invasive species, that are harmful to the listed ecological community, to become established, or • causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or 	No	<p>Where clearing will reduce a patch of GBGW to less than the 0.5 ha threshold (one patch - HZ 54), impact to the whole patch of GBGW has been included in impact calculations.</p> <p>For the remaining impacted patches, the implementation of controls such as weed hygiene and sediment/chemical controls will prevent further substantial reduction in the quality and/or integrity of this community.</p>
Interfere with the recovery of an ecological community.	No	The TEC exists in a heavily modified and fragmented landscape and the proposed clearance is unlikely to interfere with the recovery of this community in the landscape.

Threatened species

An assessment of impacts against the significant impact criteria in *Matters of National Environmental Significance Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999* (DoE, 2013a) is presented below for Crimson Spider Orchid (Table 61), Grey-headed Flying-fox (Table 62), Swift Parrot (Table 63), Regent Honeyeater (Table 63), Painted Honeyeater (Table 64), Growling Grass Frog (Table 65 and Table 66), and Striped Legless Lizard (Table 67).

Significant impact assessments for Growling Grass Frog and Golden Sun Moth are based on significant impact guidelines developed specifically for those species (DEWHA, 2009a, b).

For vulnerable species, the significant impact assessment relates to an 'important population'. The policy provides guidance on the definition (DoE 2013a):

An 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:

- *key source population, either for breeding or dispersal*
- *a population that is necessary for maintaining genetic diversity, and/or*
- *a population that is near the edge of the species range.*

The assessment of significant impacts has been completed based on the SIA conducted by KBR (2020a) and based on there being no fundamental changes to the understanding of species within the project area as a result of the current assessment.

Significant impact assessment – Crimson Spider-orchid**Table 61 Significant impact assessment for Crimson Spider-orchid**

Significant impact criteria for Vulnerable species (DoE 2013a)	Criteria met?	Assessment (KBR 2020)
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
Lead to a long-term decrease in the size of an important population of a species	No	There is potential presence of the species at Hume Highway Seymour Precinct (Seymour). No populations were recorded during the assessment, however there is potential for individuals to be present. This is unlikely to be considered an important population.
Reduce the area of occupancy of an important population	No	The patches of habitat are isolated and unlikely to support an important population. This impact is unlikely.
Fragment an existing important population into two or more populations	No	The recorded habitat is isolated, occurring adjacent to an existing rail corridor. This impact is unlikely.
Adversely affect habitat critical to the survival of a species	No	These small isolated areas are unlikely to be critical to the survival of the species. This impact is unlikely.
Disrupt the breeding cycle of an important population	No	This impact is unlikely, as an important population is unlikely.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	No	Neither the availability nor quality of habitat will be altered to the extent that the species would be likely to decline. This impact is unlikely.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Introduce disease that may cause the species to decline, or	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Interfere substantially with the recovery of the species.	No	These small isolated areas are unlikely to be of importance to the recovery of the species. This impact is unlikely.

Significant impact assessment – Grey-headed Flying-fox**Table 62 Significant impact assessment for Grey-headed Flying-fox**

Significant impact criteria for Vulnerable species (DoE 2013a)	Criteria met?	Assessment (KBR 2020)
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
Lead to a long-term decrease in the size of an important population of a species	No	There is potential habitat for this species to occur in association with the woodland habitat. The habitat is likely to be limited to occasional foraging and dispersal habitat for the species. It is unlikely that an important population is present.
Reduce the area of occupancy of an important population	No	The loss of woodland habitat is localised to sections of dispersal habitat. It is unlikely that an important population is present.
Fragment an existing important population into two or more populations	No	The loss of woodland habitat is localised to sections of dispersal habitat. It is unlikely potential habitat impacts would fragment an existing population.
Adversely affect habitat critical to the survival of a species	No	It is not considered that the habitat present or impacts will adversely affect critical habitat.
Disrupt the breeding cycle of an important population	No	This impact is unlikely, as an important population is unlikely.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	No	Neither the availability nor quality of habitat will be altered to the extent that the species would be likely to decline. This impact is unlikely.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Introduce disease that may cause the species to decline, or	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Interfere substantially with the recovery of the species.	No	As potential impacts are limited to potential dispersal habitat and unlikely to interfere with the species recovery.

Significant impact assessment – Swift Parrot and Regent Honeyeater

An assessment of impacts on Swift Parrot and Regent Honeyeater against the significant impact criteria for endangered or critically endangered species in *Matters of National Environmental Significance Significant impact guidelines 1.1 - Environment Protection and Biodiversity Conservation Act 1999* (DoE, 2013a) is presented in Table 63.

Table 63 Significant impact assessment for Swift Parrot and Regent Honeyeater

Significant impact criteria for endangered or critically endangered species (DoE 2013a)	Criteria met?	Discussion (KBR 2020)
An action is likely to have a significant impact on an endangered or critically endangered species if there is a real chance or possibility that it will:		
Lead to a long-term decrease in the size of population	No	There is potential habitat for these listed species, corresponding with the woodland bird habitat. The habitat is likely to be limited to occasional foraging and dispersal habitat for these species. The impacts are unlikely to result in long-term decline of the species, due to the localised impacts occurring in areas that are not considered to be important of any population for the species foraging and breeding.
Reduce the area of occupancy of a population	No	The loss of woodland habitat is localised to sections of dispersal habitat. It is unlikely this habitat would be occupied by a population of either species.
Fragment an existing important population into two or more populations	No	It is not considered that a population of either species is present. Both species are able to move through the landscape and extent of loss is not expected to fragment or prevent individuals moving between breeding and foraging habitat.
Adversely affect habitat critical to the survival of a species	No	It is not considered that the habitat present or impacts will adversely affect critical habitat.
Disrupt the breeding cycle of a population	No	These impacts are unlikely to impact the species breeding sites or populations.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	No	This impact is unlikely as impacts are unlikely to prevent dispersal.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the species' habitat	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Introduce disease that may cause the species to decline, or	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Interfere substantially with the recovery of the species.	No	As potential impacts are limited to potential dispersal habitat and unlikely to interfere with the species recovery.

Significant impact assessment – Painted Honeyeater**Table 64 Significant impact assessment for Painted Honeyeater**

Significant impact criteria for Vulnerable species (DoE 2013a)	Criteria met?	Assessment (KBR 2020)
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
Lead to a long-term decrease in the size of an important population of a species	No	There is potential habitat for this species, corresponding with the woodland bird habitat. The habitat is likely to be limited to occasional foraging and dispersal habitat for this species. It is unlikely that an important population is present.
Reduce the area of occupancy of an important population	No	The loss of woodland habitat is localised to sections of dispersal habitat. It is unlikely this habitat would be occupied by an important population of painted honeyeater.
Fragment an existing important population into two or more populations	No	The loss of woodland habitat is localised to sections of dispersal habitat. It is unlikely potential habitat impacts would fragment an existing population.
Adversely affect habitat critical to the survival of a species	No	It is not considered that the habitat present or impacts will adversely affect critical habitat.
Disrupt the breeding cycle of an important population	No	This impact is unlikely, as an important population is unlikely.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	No	Neither the availability nor quality of habitat will be altered to the extent that the species would be likely to decline. This impact is unlikely.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Introduce disease that may cause the species to decline, or	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Interfere substantially with the recovery of the species.	No	As potential impacts are limited to potential dispersal habitat and unlikely to interfere with the species recovery.

Significant impact assessment – Growling Grass Frog

The assessment of the potential for the Project to have a significant impact on Growling Grass Frog was made against the criteria contained within *Significant impact guidelines for the vulnerable growling grass frog (Litoria raniformis) – Nationally threatened species and ecological communities EPBC Act policy statement 3.14* (DEWHA, 2009a) is provided in Table 65. This policy statement builds on the information and explanations in *EPBC Act policy statement 1.1 Significant impact guidelines – Matters of national environmental significance* (DoE, 2013a) therefore an assessment against those criteria is also provided Table 66.

Table 65 Significant impact assessment for Growling Grass Frog – EPBC Act policy statement 3.14

Significant impact criteria (DEWHA 2009)	Impact threshold	Assessment
Habitat degradation in an area supporting an important population	<p>Permanent removal or degradation of terrestrial habitat (for example between ponds, drainage lines or other temporary/permanent habitat) within 200 m of a water body in temperate regions, or 350 m of a water body in semi-arid regions, that results in the loss of dispersal or overwintering opportunities for an important population.</p> <p>Alteration of aquatic vegetation diversity or structure that leads to a decrease in habitat quality.</p> <p>Alteration to wetland hydrology, diversity, and structure (for example any changes to timing, duration, or frequency of flood events) that leads to a decrease in habitat quality.</p> <p>Introduction of predatory fish and/or disease agents.</p>	<p>This impact is unlikely because potential aquatic habitat for an important population is avoided by project area and controls will be employed to mitigate potential indirect impacts on aquatic habitat (e.g. sedimentation).</p> <p>While a small extent of potential terrestrial foraging habitat may be impacted, this habitat is not located between areas of permanent habitat and its loss will not result in the loss of dispersal opportunities for an important population of the species.</p> <p>Hygiene controls will be employed to mitigate the potential introduction of predatory fish and/or disease agents.</p>
Isolation and fragmentation of populations	<p>Net reduction in the number and/or diversity of water bodies available to an important population.</p> <p>Removal or alteration of available terrestrial or aquatic habitat corridors (including alteration of connectivity during flood events).</p> <p>Construction of physical barriers to movement between water bodies, such as roads or buildings.</p>	<p>Removal of terrestrial habitat is not likely to be a barrier to movement or further isolate or fragment a population. Aquatic habitat is avoided. This impact is unlikely.</p>

Table 66 Significant impact assessment for Growling Grass Frog – EPBC Act policy statement 1.1

Significant impact criteria for Vulnerable species (DoE 2013a)	Criteria met?	Assessment
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
Lead to a long-term decrease in the size of an important population of a species	No	While a small extent of potential terrestrial foraging habitat may be impacted, this will not lead to a long-term decrease in an important population of the species.
Reduce the area of occupancy of an important population	No	Potential aquatic habitat is avoided by the project area. While a small extent of potential terrestrial foraging habitat may be impacted (approximately 0.13 ha), this habitat is not located between areas of permanent habitat and its loss will not result in the loss of dispersal opportunities for an important population of the species. This impact is unlikely.
Fragment an existing important population into two or more populations	No	Removal of terrestrial habitat is not likely to be a barrier to movement or further isolate or fragment a population. Aquatic habitat is avoided. This impact is unlikely.
Adversely affect habitat critical to the survival of a species	No	Potential aquatic habitat critical to the survival of the species is avoided by project area. This impact is unlikely.
Disrupt the breeding cycle of an important population	No	Potential aquatic breeding habitat is avoided by the project. This impact is unlikely.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	No	Neither the availability nor quality of habitat will be altered to the extent that the species would be likely to decline. This impact is unlikely.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Introduce disease that may cause the species to decline, or	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Interfere substantially with the recovery of the species.	No	While a small extent of potential terrestrial foraging habitat may be impacted, this will not interfere with the recovery of the species. This impact is unlikely.

Significant impact assessment – Striped Legless Lizard

According to the approved conservation advice for Striped Legless Lizard (TSSC, 2016) all populations of Striped Legless Lizard are likely to be important as a result of the large-scale loss and degradation of core habitat (grassland and grassy woodlands) since European settlement as well as the ongoing pressures of habitat degradation and fragmentation.

An important population of the striped legless lizard is one that meets at least one of the criteria outlined in DoE (2013a) above AND is likely to be viable over the long-term (DSEWPaC, 2011). To be viable, a population must occur in suitable habitat with the ability for population dynamics to occur over time (i.e.

breeding, recruitment and dispersal). What is not likely to be an important population are small areas of isolated habitat currently under pressure or small sites which support marginal or low-quality habitat (DSEWPaC, 2011).

Habitat for an important population typically comprises areas of native temperate grassland or grassy woodland where the species is either known or has potential to occur. Patches must support predominantly tussock-forming species (native or non-native) and be greater than 0.5 ha in size. However, the species is also known to occupy habitats which superficially appear unsuitable (e.g. degraded sites dominated by introduced understorey species that are not connected higher quality habitat). As such, habitat characteristics alone should be treated with caution when assessing if a site is likely to support an important population (DSEWPaC, 2011).

Table 67 Significant impact assessment for Striped Legless Lizard

Significant impact criteria for Vulnerable species (DoE 2013a)	Criteria met?	Assessment (KBR 2020)
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
Lead to a long-term decrease in the size of an important population of a species	No	Habitat present in the project areas are generally small, less than 0.5 ha and an important population is unlikely to be present.
Reduce the area of occupancy of an important population	No	Habitat present in the project areas are generally small, less than 0.5 ha and an important population is unlikely to be present.
Fragment an existing important population into two or more populations	No	The habitat is isolated, occurring adjacent to an existing rail corridor, and an important population is unlikely to be present. This impact is unlikely.
Adversely affect habitat critical to the survival of a species	No	These small areas are unlikely to be critical to the survival of the species. This impact is unlikely.
Disrupt the breeding cycle of an important population	No	This impact is unlikely, as an important population is unlikely.
Modify, destroy, remove, or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	No	Neither the availability nor quality of habitat will be altered to the extent that the species would be likely to decline. This impact is unlikely.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Introduce disease that may cause the species to decline, or	No	Hygiene controls will be employed to mitigate this potential impact. This impact is unlikely.
Interfere substantially with the recovery of the species.	No	These small isolated areas are unlikely to be of importance to the recovery of the species. This impact is unlikely.