

# Test of significance for Merool Holiday Park riverbank rehabilitation

## Introduction

This test of significance is part of the statement of environmental effects for the Merool Holiday Park riverbank rehabilitation, Moama NSW.

A database search was undertaken on 9 December 2021 of the NSW Environment, Energy and Science (BioNet Atlas) and the Department of Agriculture, Water and Environment websites to identify threatened species that may be found within the proposed project site as listed under the *Biodiversity Conservation Act 2016* and the *Environmental Protection and Biodiversity Act 1999* (EPBC Act).

A desktop search of the online databases was undertaken as follows:

- NSW Environment, Energy and Science BioNet Atlas
- *Fisheries Management Act 1994*
- Department of Agriculture, Water and Environment, Environmental Protection and Biodiversity Conservation (EPBC) Protected Matters Report

The following threatened species has potential to occupy the site and has triggered a test of significance:

- **Sloane's Froglet (*Crinia sloanei*) Endangered NSW**
- **Growling Grass-frog (*Litoria raniformis*) Vulnerable NSW**
- **Silver Perch (*Bidyanus bidyanus*) Vulnerable NSW, Critically endangered Commonwealth**
- **Murray Hardyhead (*Craterocephalus fluviatile*), Endangered Commonwealth**
- **Flathead Galaxias (*Galaxias rostratus*), Critically endangered Commonwealth**
- **Trout Cod (*Maccullochella macquariensis*) Endangered Commonwealth**
- **Murray Cod (*Maccullochella peelii*) Vulnerable Commonwealth**
- **Macquarie Perch (*Macquaria australasica*) Endangered Commonwealth**
- **Murray Crayfish (*Euastacus armatus*) Vulnerable NSW**

## Sloane's Froglet (*Crinia sloanei*)

**(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:**

**(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

Sloane's Froglet has been recorded from widely scattered sites in the floodplains of the Murray-Darling Basin, with the majority of records in the Darling Riverine Plains, NSW South Western Slopes and Riverina bioregions in New South Wales. It has not been recorded recently in the northern part of its range and has only been recorded infrequently in the southern part of its range in NSW. It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats.

The proposal will not affect the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

**(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or  
N/A – Sloane’s Froglet is not considered an endangered ecological community, but a single species, therefore, no ecological communities are placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,  
N/A – Sloane’s Froglet is not considered an endangered ecological community, but a single species, the development is not likely to substantially and adversely modify the composition of an endangered community, therefore placing it at risk.

**(c) in relation to the habitat of a threatened species or ecological community:**

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and  
Due to the small, localised nature of the proposal, only minor modification to potential habitat will occur.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and  
The proposal will not cause fragmentation or isolations from other potential habitats.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,  
The habitat proposed to be modified is not critical to the long-term survival of the species.

**(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

The activity area is not mapped as an area of outstanding biodiversity value (OBV).

**(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

The action does not contravene part of the following key threatening processes as listed in the *BC Act 2016 Schedule 4*.

**Growling Grass-frog (*Litoria raniformis*)**

**(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:**

**(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

The Growling Grass Frogs need still or slow-moving water with emergent vegetation around the edges and mats of floating and submerged plants. They can live in artificial waterbodies, such as farm dams, irrigation channels and disused quarries. Favourable habitat features include abundant aquatic vegetation, minimal tree canopy cover, waterbodies with salinity less than 7.0 mS/cm or (7,000 EC) which hold water for at least six months of the year. A cluster of waterbodies (within 700 m) allows frogs to move between sites as conditions change. They usually move on rainy nights.

It is unlikely that the threatened species will be impacted so that the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction. The aim of the project is to increase available habitat for the species by reducing erosion in the long term.

**(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

N/A – Growling Grass-frog is not considered an endangered ecological community, but a single species, therefore no ecological communities are placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

N/A – Growling Grass-frog is not considered an endangered ecological community, but a single species, the development is not likely to substantially and adversely modify the composition of an endangered community, therefore placing it at risk.

**(c) in relation to the habitat of a threatened species or ecological community:**

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

Due to the small nature project, only minor modification to potential foraging habitat may occur.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

The proposal will not cause fragmentation or isolations from other potential foraging habitats, rather enhance habitat available.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

The habitat proposed to be modified is not critical to the long-term survival of the species.

**(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

The area not mapped as an area of outstanding biodiversity value (OBV).

**(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

The action does not contravene part of the following key threatening processes as listed in the *BC Act 2016 Schedule 4*.

**Silver Perch (*Bidyanus bidyanus*)**

**(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:**

**(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

Silver Perch have been found in a wide range of habitats and climates across the Murray-Darling Basin. They are generally found in faster-flowing water including rapids and races and more open sections of river. Individuals sometimes form large shoals in open water.

They are omnivorous, feeding on a variety of small prey including aquatic insects, molluscs, worms, crustaceans, zooplankton and algae.

The proposal will not affect the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

**(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

N/A – Silver Perch is not considered an endangered ecological community, but a single species, therefore, no ecological communities are placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

N/A – Silver Perch is not considered an endangered ecological community, but a single species, the development is not likely to substantially and adversely modify the composition of an endangered community, therefore placing it at risk.

**(c) in relation to the habitat of a threatened species or ecological community:**

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

Due to the small, localised nature of the proposal, only minor modification to potential habitat will occur.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

The proposal will not cause fragmentation or isolations from other potential habitats.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

The habitat proposed to be modified is not critical to the long-term survival of the species.

**(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

The activity area is not mapped as an area of outstanding biodiversity value (OBV).

**(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

The action does not contravene part of the following key threatening processes as listed in the *BC Act 2016 Schedule 4*.

**Murray Hardyhead (*Craterocephalus fluviatile*)**

**(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:**

**(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

Murray hardyhead prefer brackish water but can survive in saline environments. They tend to form schools, and can be found along the sheltered edges of lakes, billabongs, backwaters and wetlands, often in areas with abundant submerged vegetation.

It is unlikely that the threatened species will be impacted so that the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction. The aim of the project is to increase available habitat for the species by reducing erosion in the long term.

**(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or  
N/A – Murray Hardyhead is not considered an endangered ecological community, but a single species, therefore no ecological communities are placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,  
N/A – Murray Hardyhead is not considered an endangered ecological community, but a single species, the development is not likely to substantially and adversely modify the composition of an endangered community, therefore placing it at risk.

**(c) in relation to the habitat of a threatened species or ecological community:**

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and  
Due to the small nature project, only minor modification to potential foraging habitat may occur.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and  
The proposal will not cause fragmentation or isolations from other potential foraging habitats, rather enhance habitat available.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,  
The habitat proposed to be modified is not critical to the long-term survival of the species.

**(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

The area not mapped as an area of outstanding biodiversity value (OBV).

**(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

The action does not contravene part of the following key threatening processes as listed in the *BC Act 2016 Schedule 4*.

**Flathead Galaxias (*Galaxias rostratus*)**

**(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:**

**(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

Flathead Galaxias are found in still or slow-moving water bodies such as wetlands and lowland streams. The species has been recorded forming shoals. They have been associated with a range of habitats including rock and sandy bottoms and aquatic vegetation. Flathead Galaxias spawn in spring and lay slightly adhesive demersal eggs.

The proposal will not affect the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

**(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or  
N/A – Flathead Galaxias is not considered an endangered ecological community, but a single species, therefore, no ecological communities are placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,  
N/A – Flathead Galaxias is not considered an endangered ecological community, but a single species, the development is not likely to substantially and adversely modify the composition of an endangered community, therefore placing it at risk.

**(c) in relation to the habitat of a threatened species or ecological community:**

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and  
Due to the small, localised nature of the proposal, only minor modification to potential habitat will occur.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and  
The proposal will not cause fragmentation or isolations from other potential habitats.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,  
The habitat proposed to be modified is not critical to the long-term survival of the species.

**(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

The activity area is not mapped as an area of outstanding biodiversity value (OBV).

**(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

The action does not contravene part of the following key threatening processes as listed in the *BC Act 2016 Schedule 4*.

**Trout Cod (*Maccullochella macquariensis*)**

**(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:**

**(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

The Trout Cod is endemic to the southern Murray-Darling river system, including the Murrumbidgee and Murray Rivers, and the Macquarie River in central NSW. The species was once widespread and abundant in these areas but has undergone dramatic declines in its distribution and abundance over the past century. The last known reproducing population of Trout Cod is confined to the Murray River below Yarrawonga downstream to Tocumwal.

It is unlikely that the threatened species will be impacted so that the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction. The aim of the project is to increase available habitat for the species by reducing erosion in the long term.

**(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or  
N/A – Trout Cod is not considered an endangered ecological community, but a single species, therefore no ecological communities are placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,  
N/A – Trout Cod is not considered an endangered ecological community, but a single species, the development is not likely to substantially and adversely modify the composition of an endangered community, therefore placing it at risk.

**(c) in relation to the habitat of a threatened species or ecological community:**

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and  
Due to the small nature project, only minor modification to potential foraging habitat may occur.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and  
The proposal will not cause fragmentation or isolations from other potential foraging habitats, rather enhance habitat available.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,  
The habitat proposed to be modified is not critical to the long-term survival of the species.

**(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

The area not mapped as an area of outstanding biodiversity value (OBV).

**(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

The action does not contravene part of the following key threatening processes as listed in the *BC Act 2016 Schedule 4*.

**Murray Cod (*Maccullochella peelii*)**

**(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:**

**(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

Murray Cod, also referred to as cod or codfish, were once abundant throughout the Murray-Darling river system, but overfishing and environmental changes have drastically reduced its numbers. The species has been selectively stocked in other river systems in NSW, Victoria and Western Australia, but has generally failed to establish itself in those areas. Murray Cod generally prefer slow flowing, turbid water in streams and rivers, favouring deeper water around boulders, undercut banks, overhanging vegetation and logs. Small numbers are still present in the Nepean River and Yarra River.

The proposal will not affect the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

**(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or  
N/A – Murray Cod is not considered an endangered ecological community, but a single species, therefore, no ecological communities are placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,  
N/A – Murray Cod is not considered an endangered ecological community, but a single species, the development is not likely to substantially and adversely modify the composition of an endangered community, therefore placing it at risk.

**(c) in relation to the habitat of a threatened species or ecological community:**

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and  
Due to the small, localised nature of the proposal, only minor modification to potential habitat will occur.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and  
The proposal will not cause fragmentation or isolations from other potential habitats.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,  
The habitat proposed to be modified is not critical to the long-term survival of the species.

**(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

The activity area is not mapped as an area of outstanding biodiversity value (OBV).

**(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

The action does not contravene part of the following key threatening processes as listed in the *BC Act 2016 Schedule 4*.

**Macquarie Perch (*Macquaria australasica*)**

**(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:**

**(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

Macquarie Perch are found in the Murray-Darling Basin (particularly upstream reaches) of the Lachlan, Murrumbidgee and Murray rivers, and parts of south-eastern coastal NSW, including the Hawkesbury/Nepean and Shoalhaven catchments. Macquarie Perch occur in waters with lots of cover such as aquatic vegetation, snags, boulders and overhanging banks.

It is unlikely that the threatened species will be impacted so that the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction. The aim of the project is to increase available habitat for the species by reducing erosion in the long term.

**(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**



(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or  
N/A – Macquarie Perch is not considered an endangered ecological community, but a single species, therefore no ecological communities are placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,  
N/A – Macquarie Perch is not considered an endangered ecological community, but a single species, the development is not likely to substantially and adversely modify the composition of an endangered community, therefore placing it at risk.

**(c) in relation to the habitat of a threatened species or ecological community:**

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and  
Due to the small nature project, only minor modification to potential foraging habitat may occur.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and  
The proposal will not cause fragmentation or isolations from other potential foraging habitats, rather enhance habitat available.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,  
The habitat proposed to be modified is not critical to the long-term survival of the species.

**(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

The area not mapped as an area of outstanding biodiversity value (OBV).

**(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

The action does not contravene part of the following key threatening processes as listed in the *BC Act 2016 Schedule 4*.

**Murray Crayfish (*Euastacus armatus*)**

**(1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:**

**(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction**

Murray Crayfish can be found in the Murray River upstream of Mildura, in the Murrumbidgee River and in some dams, and are the only species in the *Euastacus* genus that live in both cold and warm water habitats. Murray Crayfish prefer cool, flowing water that is well oxygenated. The species is tolerant of water temperatures up to 27°C and moderate salinities, but are intolerant to low dissolved oxygen concentrations. They create burrows that vary in complexity, from deep burrows with multiple entrances to simple burrows under a rock or log,

It is unlikely that the threatened species will be impacted so that the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction. The aim of the project is to increase available habitat for the species by reducing erosion in the long term.

**(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:**

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or  
N/A – Murray Crayfish is not considered an endangered ecological community, but a single species, therefore no ecological communities are placed at risk of extinction.

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,  
N/A – Murray Crayfish is not considered an endangered ecological community, but a single species, the development is not likely to substantially and adversely modify the composition of an endangered community, therefore placing it at risk.

**(c) in relation to the habitat of a threatened species or ecological community:**

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and  
Due to the small nature project, only minor modification to potential foraging habitat may occur.

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and  
The proposal will not cause fragmentation or isolations from other potential foraging habitats, rather enhance habitat available.

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,  
The habitat proposed to be modified is not critical to the long-term survival of the species.

**(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly)**

The area not mapped as an area of outstanding biodiversity value (OBV).

**(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.**

The action does not contravene part of the following key threatening processes as listed in the BC Act 2016 Schedule 4.

**Conclusions**

The assessment of significance for:

- Sloane's Froglet
- Growling Grass-frog
- Silver Perch
- Murray Hardyhead
- Flathead Galaxias
- Trout Cod
- Murray Cod
- Macquarie Perch
- Murray Crayfish

revealed that the potential impacts of the proposal on the threatened species are extremely unlikely and where there could be potential impacts, they will be very low. Potential minor impacts resulting from the proposed infrastructure install are not expected to increase the likelihood of a threatened or endangered species becoming extinct.

The test of significance for these threatened species does not trigger the requirement for a species impact statement (SIS). The proposal is deemed to be non-significant for the assessed species. In determining the significance of the proposed works on threatened species, the following matters were taken into consideration:

- implementation of the proposed works, installation, new operation and maintenance regimes
- activities to be undertaken in the area following the proposed works
- all direct and indirect impacts, on and off-site impacts through all phases
- the frequency and duration of each known or likely impact/action
- the total impact which can be attributed to that action over the entire geographic area affected initially and over time
- the sensitivity of the receiving environment
- the degree of confidence with which the impacts of the action are known and understood.

## **References**

Department of the Environment and Energy (2021) [Online, accessed 9 December 2021]  
<http://www.environment.gov.au/biodiversity/threatened/>

Office of Environment and Heritage (NSW) (2021) BioNet Atlas of NSW Wildlife, [Online, accessed 9 December 2021]  
[http://www.environment.nsw.gov.au/atlaspublicapp/UI\\_Modules/ATLAS\\_/AtlasSearch.aspx](http://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/AtlasSearch.aspx)