

Environmental Impact Statement
Uungula Wind Farm

Appendix H: Assessments of Significance (Eco Logical Australia, 2020)

May 2020

Assessments of Significance - EPBC Act Significant Impact Guidelines & Section 220ZZ of *Fisheries Management Act 1994*

EPBC Act Significant Impact Guidelines

The EPBC Act Administrative Guidelines on Significance set out 'Significant Impact Criteria' that are to be used to assist in determining whether a proposed action is likely to have a significant impact on matters of national environmental significance. Matters listed under the EPBC Act as being of national environmental significance relevant to this BAR include:

- Listed threatened species and ecological communities
- Listed migratory species

'Significant Impact Criteria' are provided under the Act with specific criteria provided for threatened species, and ecological communities listed as Endangered or Critically Endangered. The relevant Significant Impact Criteria have been applied to the following species and communities:

- *Anthochaera phrygia* (Regent Honeyeater)
- *Chalinolobus dwyeri* (Large-eared Pied Bat)
- *Delma impar* (Striped Legless Lizard)
- *Grantiella picta* (Painted Honeyeater)
- *Hirundapus caudacutus* (White-throated Needletail)
- *Lathamus discolour* (Swift Parrot)
- *Myiagra cyanoleuca* (Satin Flycatcher)
- *Nyctophilus corbeni* (Corben's Long-eared Bat)
- *Phascolarctos cinereus* (Koala)
- *Polytelis swainsonii* (Superb Parrot)
- *Pseudomys novaehollandiae* (New Holland Mouse)
- *Pteropus poliocephalus* (Grey-headed Flying-fox)
- *Dichanthium setosum* (Bluegrass)
- *Prasophyllum petilum* (Tarengo Leek Orchid)
- *Swainsona recta* (Small Purple-pea)
- *Zieria obcordata*
- White Box – Yellow Box – Blakely's Red Gum Woodland and Derived Native Grasslands CEEC

FM Act

If a planned development or activity is likely to have any impact on a threatened species listed under the FM Act, a preliminary assessment of the potential impacts must be made (the 'Assessment of Significance' or '7 part test'). An Assessment of Significance has been completed for the following species and communities:

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- *Mogurnda adspersa* (Southern Purple Spotted Gudgeon)
 - *Tandanus tandanus* (Eel-tailed Catfish population of the Murray-Darling Basin)
 - *Ambassis agassizii* (Western population of Olive Perchlet)
 - Aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River

	Nomadic nectarivorous birds – Regent Honeyeater and Painted Honeyeater	Hollow dependant Migratory birds – Superb Parrot and Swift Parrot
Criterion 1: lead to a long-term decrease in the size of an important population of a species	<p>The Commonwealth defines an important population as a population that is necessary for a species long term survival and recovery. This may include populations that are a key source populations for either breeding or dispersal, populations that are necessary for maintaining genetic diversity or populations that are near the limit of the species range (DotE 2013).</p> <p>There is no known population of either of these species in the locality. These species were not identified in the ERM bird surveys and there are no records within the Study Area. Isolated records for Regent Honeyeater exist to the south of the Study Area, on the banks of Burrendong Dam. The closet record of this species is 7.5 km from the Study Area and was recorded in 1984 (Atlas of Living Australia 2020).</p>	<p>The Project is not located within any key breeding areas for the Superb Parrot or Swift Parrot and therefore is considered unlikely to support an important population. Both of these species have known and defined breeding habitats, to the south around Boorowa NSW and Tasmania respectively. These species may use the locality sporadically for foraging on flowering plants during their migratory flights, in particular, the Superb Parrot has been recorded within the Study Area.</p> <p>Isolated records exist for Swift Parrot to the south of the Study Area, on the banks of Burrendong Dam. The closest record of this species is approximately 7.5 km from the Development Footprint and was recorded in 1991 (Atlas of Living Australia 2020).</p>
Criterion 2: reduce the area of occupancy of an important population	<p>The Study Area contains suitable foraging habitat for this species in the form of flowering eucalypts. In the absence of a known local population, there is potential for this species to forage sporadically in the area. Approximately 140 ha of the current Development Footprint contains moderate to good condition vegetation which may be considered suitable foraging habitat for this species, of the total approximately 639 ha of native vegetation to be removed for the Project. This area is likely to be revised down following a detailed design process.</p>	<p>The Project is not located within any key breeding areas for the Superb Parrot or Swift Parrot and therefore is considered unlikely to support an important population.</p>
Criterion 3: fragment an existing important population into two or more populations	<p>The existing landscape within the IBRA subregion has been significantly altered since European settlement. Gentle slopes have been cleared to increase grazing areas however, areas with steeper, rugged ridges and rangers or areas close to creek lines, along roadsides and property boundaries remain vegetated. The Development Footprint generally follows ridgelines and will not impact connectivity between the more vegetated valleys.</p> <p>Both of these species are highly mobile and capable of long-distance movements therefore they are not considered highly susceptible to fragmentation. The Project is considered unlikely to fragment the any existing populations of the Regent Honeyeater and Painted Honeyeater.</p>	<p>The Project is not located within any key breeding areas for the Superb Parrot or Swift Parrot and therefore is considered unlikely to support an important population.</p>
Criterion 4: adversely affect habitat critical to the survival of a species	<p>The Study Area contains suitable foraging habitat for this species in the form of flowering eucalypts. In the absence of a known local population, there is potential for this species to forage sporadically in the area. Approximately 140 ha of the current Development Footprint contains moderate to good condition vegetation which may be considered suitable foraging habitat for this species, of the total approximately 639 ha of native vegetation to be removed for the Project. This area is likely to be revised down following a detailed design process.</p> <p>The habitat impacted within the development footprint is typical of the locality and extends well beyond the development footprint. The loss of habitat is not expected to be significant. Therefore, it is considered unlikely that the proposed works will adversely affect habitat critical to the survival of a species.</p>	<p>The habitat impacted within the development footprint, is typical of the locality and extends well beyond the development footprint. The loss of habitat is not expected to be significant. Therefore, it is considered unlikely that the proposed action will adversely affect habitat critical to the survival of these species.</p>
Criterion 5: disrupt the breeding cycle of an important population	<p>The Development Footprint does not occur within any known key breeding areas for these species. Therefore, the proposed works will not disrupt the breeding cycle.</p>	<p>The Development Footprint does not occur within any known key breeding areas for these species. The Development footprint contains no breeding habitat for the Swift Parrot and Superb Parrot; therefore, the proposed works will not disrupt the breeding cycle of an important population.</p>
Criterion 6: modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	<p>The loss of habitat is considered unlikely to significantly impact the use of the area for foraging by these species. Therefore, it is expected that the area will continue to provide foraging resources for these species, and as such a reduction in quality and availability of habitat to the extent that the species is likely to decline is considered unlikely to result from the proposed works.</p>	<p>The Development Corridor contains suitable foraging habitat for these species. In the absence of a known local population, there is potential for these species to forage sporadically in the area. Approximately 140 ha of the current Development Footprint contains moderate to good condition vegetation which may be considered suitable foraging habitat for this species, of the total approximately 639 ha of native vegetation to be removed for the Project. This area is likely to be revised down following a detailed design process.</p> <p>The existing landscape within the IBRA subregion has been significantly altered since European settlement. Gentle slopes have been cleared to increase grazing areas however, areas with steeper, rugged ridges and rangers or areas close to creek lines, along roadsides and property boundaries remain vegetated. The Development Footprint generally follows ridgelines and will not impact connectivity between the more vegetated valleys.</p>
Criterion 7: result in invasive species that are harmful to an endangered or vulnerable species becoming established in the species' habitat	<p>The proposed works would not result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered species' habitat.</p>	<p>Impacts to these species will be limited to a reduction in foraging habitat from vegetation removed within the Development Footprint.</p>
Criterion 8: introduce disease that may cause the species to decline.	<p>The proposed works would not introduce disease that may cause the species to decline.</p>	<p>The proposed works would not introduce disease that may cause the species to decline.</p>

	Nomadic nectarivorous birds – Regent Honeyeater and Painted Honeyeater	Hollow dependant Migratory birds – Superb Parrot and Swift Parrot
Criterion 9: interfere with the recovery of a vulnerable species.	<p>There is currently no Recovery Plan for the Painted Honeyeater. A key threatening process for this species is habitat loss or degradation at a landscape scale. As the Development Footprint is in a modified, degraded and fragmented state, it is unlikely that the scale of clearing for the proposed works will interfere substantially with the recovery of this species.</p> <p>The objectives of the Regent Honeyeater Recovery Plan (DoE 2016) were to:</p> <ul style="list-style-type: none"> Reverse the long-term population trend of decline and increase the numbers of regent honeyeaters to a level where there is a viable, wild breeding population; and Enhance the condition of habitat across the regent honeyeaters range to maximise survival and reproductive success. <p>As no records of this species have been made within the Development Footprint, combined with the lack of nearby records, it is unlikely that there will be impacts on any individuals or populations of Regent Honeyeater. It is therefore believed that the proposed works will not interfere with the recovery plan for this species.</p>	<p>The objectives of the Swift Parrot Recovery Plan (DoE 2011):</p> <ul style="list-style-type: none"> To identify and prioritise habitats and sites used by the species across its range, on all land tenures. To implement management strategies to protect and improve habitats and sites on all land tenures To monitor and manage the incidence of collisions, competition and Beak and Feather Disease. To monitor population trends and distribution throughout the range. <p>The objectives of the Superb Parrot Recovery Plan (DoE 2011):</p> <ul style="list-style-type: none"> To determine populations trends in the Superb Parrot To increase the level of knowledge of the Superb Parrot's ecological requirements. Develop and implement threat abatement strategies Increase community involvement in and awareness of the Superb Parrot recovery program. <p>The Project will not interfere with the objectives of the recovery plans. There is limited potential for mortality due to rotor collisions as this species typically flies below Rotor Swept Area (RSA) height. The Proponent may consider monitoring programs to contribute to the knowledge of the species. Records of Superb Parrot will be submitted by ELA to the NSW Government database under scientific licence obligations.</p>
	Koala	Corben's Long-eared Bat
Criterion 1: lead to a long-term decrease in the size of an important population of a species	Koala is known from nearby records and is considered to have the potential to occur, albeit in low numbers, in the Development Corridor. It is not considered to occur as an important population at the site. Targeted surveys in the 2012 – 2013 ERM assessment did not identify koala or any evidence of occupation. Nonetheless, a precautionary approach has been undertaken and offsets have been calculated accordingly under the NSW BC Act. Given this, the proposed works are unlikely to lead to a long-term decrease in the size of an important population of a species.	<p>The proposed works would remove potential foraging habitat from within the Development Footprint in the form of open woodland. The proposed works will also remove tree hollows which provide roosting habitat for this species, with micro-siting undertaken to avoid clearing HBTs were possible. Suitable foraging and sheltering habitat would remain abundant within the surrounding adjacent vegetation.</p> <p>The Development Footprint may provide foraging habitat and roosting habitat for this species, however the level of fragmentation is unlikely to support a key source population. Given this, the proposed works are unlikely to lead to a long-term decrease in the size of an important population of a species.</p>
Criterion 2: reduce the area of occupancy of an important population	The Development Footprint has not been identified as supporting an important population and is not near the limit of the species range. Therefore, the proposed works would not reduce the area of occupancy of an important population.	The Development Footprint has not been identified as supporting an important population and is not near the limit of the species range. Therefore, the proposed works would not reduce the area of occupancy of an important population.
Criterion 3: fragment an existing important population into two or more populations	The loss of a small proportion of potential habitat from the locality is considered unlikely to impact the species. The Development Footprint has not been identified as supporting an important population and is not near the limit of the species range. Therefore, the proposed works would not fragment an existing important population into two or more populations.	The Development Footprint has not been identified as supporting an important population and is not near the limit of the species range. Therefore, the proposed works would not fragment an existing important population into two or more populations.
Criterion 4: adversely affect habitat critical to the survival of a species	The Project would remove approximately 139.69 ha of additional potential Koala habitat from within the proposed works area. Individual specimens of Koala feed-tree species may be removed. Koala has not been identified within the site and the site is not considered to include habitat critical to the survival of the species.	The proposed works would remove 139 ha of potential good condition woodland habitat for this species. This species is highly mobile, and a large expanse of suitable habitat is available in the areas surrounding the Development Footprint. It is therefore unlikely that the proposed works would affect habitat critical to the survival of a species.
Criterion 5: disrupt the breeding cycle of an important population	The Development Footprint does not support an important population of Koala, nor have there been any sightings of breeding females. Therefore, it is unlikely that the proposed works would disrupt the breeding cycle of an important population.	No important populations are known in the Development Footprint. Due to the species being highly mobile it is unlikely that disturbance to foraging habitat would disrupt the breeding cycle of an important population.
Criterion 6: modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed works would remove approximately 139.69 ha of potential habitat for this species. Suitable habitat will remain in the greater Study Area and general locality. It is therefore unlikely that the proposed works would affect habitat to the extent that it would cause a decline to this species.	The proposed works would remove 139 ha of potential woodland habitat for this species. A large expanse suitable habitat is available in the areas surrounding the Development Footprint. It is therefore unlikely that the proposed works would affect habitat to the extent that it would cause a decline to this species.
Criterion 7: result in invasive species that are harmful to an endangered or vulnerable species becoming established in the species' habitat	The proposed works would not result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered species' habitat.	The proposed works would not result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered species' habitat.
Criterion 8: introduce disease that may cause the species to decline.	The proposed works would not introduce disease that may cause the species to decline.	The proposed works would not introduce disease that may cause the species to decline.

	Koala	Corben's Long-eared Bat
Criterion 9: interfere with the recovery of a vulnerable species.	There is currently no Recovery Plan for the Koala. A key threatening process for this species is habitat loss or degradation at a landscape scale. The Project would remove approximately 139.69 ha of additional potential Koala habitat from within the proposed works area. Individual specimens of Koala feed-tree species may be removed. Suitable habitat will remain in the greater Study Area and general locality. It is therefore unlikely that the proposed works would affect habitat to the extent that it would cause a decline to this species.	There is currently no Recovery Plan for the Corben's Long-eared Bat. A key threatening process for this species is habitat loss or degradation at a landscape scale. As the Development Footprint is in a modified, degraded and fragmented state, it is unlikely that the scale of clearing for the proposed works will interfere substantially with the recovery of this species. There is limited potential for mortality due to rotor collisions as this species typically flies below RSA height.
	Large-eared Pied Bat	Striped Legless Lizard
Criterion 1: lead to a long-term decrease in the size of an important population of a species	The potential breeding habitat of this species (cliff lines, caves and rocky outcrops) has not been identified within the development Footprint, therefore it is unlikely to support an important population and is not near the limit of the species range. Alternative habitat would remain in surrounding areas; therefore, it is unlikely that the removal of habitat from the proposed works would lead to the long-term decrease in the size of an important population of the Large-eared Pied Bat.	Habitat for this species includes grassland dominated by perennial, tussock-forming grasses. It can be found in either native or exotic dominated grasslands. No records exist within the Development Corridor and it was not identified in targeted surveys by ERM in 2012 - 2103. Given this, it is unlikely to lead to a long-term decrease in the size of an important population of this species.
Criterion 2: reduce the area of occupancy of an important population	The Development Footprint has not been identified as supporting an important population and is not near the limit of the species range. Therefore, the proposed works would not reduce the area of occupancy of an important population.	There are no records of this species in the Development Corridor and it has not been identified as supporting an important population. An expanse of similar and suitable habitat is available in the areas surrounding Development Footprint. Therefore, the proposal would not reduce the area of occupancy of an important population.
Criterion 3: fragment an existing important population into two or more populations	The Development Footprint has not been identified as supporting an important population and is not near the limit of the species range. The Development footprint is already fragmented with few well-connected areas of vegetation. As this species is obligate cave roosting species, sufficient connectivity would need to occur from the suitable roosting sites into suitable foraging areas within the Development Footprint. It is not anticipated that any suitable vegetation corridors will be fragmented as part of the proposal.	The Development Corridor has not been identified as supporting an important population as there have been no records of this species within the Development Footprint. The proposed works is not likely to prevent any significance barrier to the movement across the landscape. Therefore, the proposal would not fragment an existing important population into two or more populations.
Criterion 4: adversely affect habitat critical to the survival of a species	The proposed works would remove an additional 639 ha of native vegetation which would serve as potential foraging habitat. This species is highly mobile, and a large expanse of continuous and suitable habitat is available in the areas surrounding the Development Footprint. It is therefore unlikely that the proposed works would affect habitat critical to the survival of a species.	The proposal would remove approximately 639 ha of native vegetation, including pockets of potential habitat for this species. A large expanse of adjoining and suitable habitat is available in the areas surrounding the Development Corridor. It is therefore unlikely that the proposal would affect habitat critical to the survival of the species.
Criterion 5: disrupt the breeding cycle of an important population	No cliff lines, caves and rocky outcrops occur within Development Footprint. Therefore, it is unlikely that the proposed works would disrupt the breeding cycle of an important population of Large eared Pied Bat. There is limited potential for mortality due to rotor collisions as this species typically flies below RSA height.	No records of this species or important populations are known within the Development Footprint. Therefore, it is unlikely that the proposal would disrupt the breeding cycle of an important population.
Criterion 6: modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed works would remove 639 ha of potential foraging habitat only for this species. A large expanse of suitable habitat is available in the areas surrounding the Development Footprint. It is therefore unlikely that the proposed works would affect habitat to the extent that it would cause a decline to this species.	The proposal would remove approximately 639 ha of native vegetation, including pockets of potential habitat for this species. A large expanse of adjoining and suitable habitat is available in the greater Study Area surrounding the Development Footprint.
Criterion 7: result in invasive species that are harmful to an endangered or vulnerable species becoming established in the species' habitat	The proposed works would not result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered species' habitat.	The proposed works would not result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered species' habitat.
Criterion 8: introduce disease that may cause the species to decline.	The proposed works would not introduce disease that may cause the species to decline.	The proposed works would not introduce disease that may cause the species to decline.
Criterion 9: interfere with the recovery of a vulnerable species.	<p>A national recovery plan has been prepared for the Large-eared Pied Bat. The objective of the recovery plan is "to ensure the persistence of viable populations of the large-eared pied bat throughout its geographic range".</p> <p>As no key populations have been identified in the area surrounding the Development Footprint, the proposed works would not interfere with this recovery objective.</p>	<p>A national recovery plan has been prepared for the Striped Legless Lizard. The objective of the recovery plan is "to ensure the long-term survival of <i>D. impar</i> throughout its distribution" (NPWS 1999).</p> <p>No records exist within the Development Corridor and it was not identified in targeted surveys by ERM in 2012 – 2103, therefore, the proposal would not interfere with this recovery objective. Mitigation measures including pre-clearing surveys and micro-siting of infrastructure will be employed to avoid impacts to any previously unrecorded individuals to ensure the Project does not interfere with the recovery of this species.</p>
	Grey-headed Flying-fox	<i>Dichanthium setosum</i> (Bluegrass), <i>Swainsona recta</i> (Small Purple-pea) and <i>Zieria obcordata</i>
Criterion 1: lead to a long-term decrease in the size of an important population of a species	A Grey-headed Flying Fox camp has been recorded in Wellington, NSW approximately 14 km west of the Development footprint. Roosting camps are generally located within 20 km of regular food source, although this species can travel up to 50 km from the camp to forage. Therefore, this species has the potential to utilize the Development Footprint, particularly the flowering White Box during seasons of prolific flowering.	<p>No threatened flora species have been recorded in the Study Area.</p> <p>Populations of <i>Zieria obcordata</i> have been recorded nearby, although this species appears to grow exclusively within rocky granite outcrop. There is one record of <i>Dichanthium setosum</i> north of the Development Footprint, although this species is much more abundant within the Nandewar Bioregion. <i>Swainsona recta</i> is known from</p>

Grey-headed Flying-fox		<i>Dichanthium setosum</i> (Bluegrass), <i>Swainsona recta</i> (Small Purple-pea) and <i>Zieria obcordata</i>
	<p>There is potential for mortality due to rotor collisions as this species typically flies at RSA height. It is anticipated that this species will be spread out across the landscape and therefore reducing the number of individuals being subjected to rotor strike. The species has good eyesight and is a manoeuvrable, therefore it is expected that the majority of individuals would be able to avoid wind turbines.</p> <p>It is considered unlikely that the proposed action will lead to a long-term decrease in the size of the population, however there is uncertainty over how the locality may be used by the species in future seasons.</p>	<p>the locality and records occur to the south of the Development Corridor at Lake Burrendong, and to the west around Wellington.</p> <p>It is unlikely that a previously undiscovered important population of any of these species occurs within the Development Footprint. Nonetheless, mitigation measures including pre-clearing surveys and micro-siting of infrastructure will be employed to avoid impacts to any previously unrecorded threatened flora. Consideration to the timing of clearing activities will be given to ensure seasonal limitations to the identification of threatened flora are observed.</p>
Criterion 2: reduce the area of occupancy of an important population	The proposed action would impact up to approximately 639 ha of potential foraging habitat. The Grey-headed Flying-fox will mainly utilise Eucalypt species for foraging at times of flowering. There are no records of this species within the Development Footprint, and therefore is not considered core or important habitat for the species. This species is very mobile and is likely to remain unaffected by loss of a small area of seasonal foraging habitat.	<p>No threatened flora species have been recorded in the Study Area.</p> <p>It is unlikely that a previously undiscovered important population of any of these species occurs within the Development Footprint. Nonetheless, mitigation measures including pre-clearing surveys and micro-siting of infrastructure will be employed to avoid impacts to any previously unrecorded threatened flora.</p>
Criterion 3: fragment an existing important population into two or more populations	Fragmentation of woodland habitat associated within the proposal is likely to be limited to the widening of existing tracks, corridors for transmission lines and clearing for crane pads and turbines. As the Grey-headed Flying-fox is very mobile, the proposal is unlikely to fragment an existing important population into two or more populations.	<p>No threatened flora species have been recorded in the Study Area.</p> <p>It is unlikely that a previously undiscovered important population of any of these species occurs within the Development Footprint. Nonetheless, mitigation measures including pre-clearing surveys and micro-siting of infrastructure will be employed to avoid impacts to any previously unrecorded threatened flora.</p>
Criterion 4: adversely affect habitat critical to the survival of a species	The proposal would impact approximately 639 ha of potential foraging habitat. This species will mostly utilise flowering Eucalypts, particularly White Box. This species is highly mobile and a large expanse of contiguous and suitable habitat is available in the areas surrounding the Modification Disturbance Footprint. It is therefore unlikely that the Project would affect habitat critical to the survival of a species.	<p>No specific habitat for these threatened flora species has been identified in the Development Corridor. Where known populations of these species exist in the locality, they will remain undisturbed by the Project.</p> <p>Nonetheless, mitigation measures including pre-clearing surveys and micro-siting of infrastructure will be employed to avoid impacts to any previously unrecorded threatened flora.</p>
Criterion 5: disrupt the breeding cycle of an important population	There are no known maternity roosts within the area, which typically occur in more fertile and productive areas close to permanent water sources. Therefore, the proposal is unlikely to disrupt the breeding cycle of an important population.	<p>No threatened flora species have been recorded in the Study Area.</p> <p>It is unlikely that a previously undiscovered important population of any of these species occurs within the Development Footprint. Nonetheless, mitigation measures including pre-clearing surveys and micro-siting of infrastructure will be employed to avoid impacts to any previously unrecorded threatened flora.</p>
Criterion 6: modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Approximately 639 ha of seasonal foraging habitat will be impacted by the proposal. Use of this habitat is likely to be sporadic and small amounts of clearing is unlikely to affect the species. The Development Footprint and locality is dominated by scattered White Box and large amounts will remain unaffected by the proposal. Therefore, the proposal is unlikely to modify, destroy, remove or isolate the availability of habitat to the extent that the species is likely to decline.	<p>No specific habitat for these threatened flora species has been identified in the Development Corridor. Where known populations of these species exist in the locality, they will remain undisturbed by the Project.</p> <p>Nonetheless, mitigation measures including pre-clearing surveys and micro-siting of infrastructure will be employed to avoid impacts to any previously unrecorded threatened flora. Consideration to the timing of clearing activities will be given to ensure seasonal limitations to the identification of threatened flora are observed.</p>
Criterion 7: result in invasive species that are harmful to an endangered or vulnerable species becoming established in the species' habitat	The proposed works would not result in invasive species that are harmful to an endangered or vulnerable species becoming established in the endangered species' habitat.	A BMP would be developed, which would include weed management protocols. Assessment of priority weeds in the Project Footprint will be undertaken and appropriate management measures to minimise risk of spreading weeds outside of the Development Footprint will be implemented.
Criterion 8: introduce disease that may cause the species to decline.	The proposed works would not introduce disease that may cause the species to decline.	A BMP would be developed, which would include plant disease and pathogen management protocols.
Criterion 9: interfere with the recovery of a vulnerable species.	There is currently no Recovery Plan for the Grey headed Flying fox. A key threatening process for this species is habitat loss or degradation at a landscape scale. As the Development Footprint is in a modified, degraded and fragmented state, it is unlikely that the scale of clearing for the proposed works will interfere substantially with the recovery of this species.	These species are found in known locations throughout their regional habitat distribution and are not known to occur in the Development Corridor. Mitigation measures including pre-clearing surveys and micro-siting of infrastructure will be employed to avoid impacts to any previously unrecorded threatened flora to ensure the Project does not interfere with the recovery of these species.
White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland - CEEC occurs in both the woodland and DNG forms (CW112 and CW211)		
Criterion 1: reduce the extent of an ecological community	Approximately 22.3 ha of this CEEC was identified in the greater Study Area (5282 ha) during the ERM surveys in 2012 – 2013. The current Development Footprint includes approximately 11.25 ha of the CEEC to be impacted, although this number may increase or decrease following detailed design and micro-siting of infrastructure. For the purpose of assessment a 25% increase has been assumed, bring the estimated area of impact to approximately 14 ha.	
Criterion 2: fragment or increase fragmentation of an ecological community	Mapped CEEC is concentrated in areas associated with the upgrade to Twelve Mile Road and the overhead transmission line easements, where potential exists to avoid. In particular, grassland forms of the CEEC would remain undisturbed outside of areas of direct impact. Project infrastructure would be concentrated on ridgelines, where potential pockets of mapped CEEC are assumed to exist in a degraded state with good condition vegetation remaining undisturbed on valleys and slopes.	

White Box – Yellow Box – Blakely’s Red Gum Grassy Woodland and Derived Native Grassland - CEEC occurs in both the woodland and DNG forms (CW112 and CW211)

Existing agricultural clearing has led to existing fragmentation of the community in the Development Footprint. The Project is unlikely to increase fragmentation of this community, given the small patches to be removed are already fragmented.

Criterion 3: adversely affect habitat critical to the survival of an ecological community

Good condition areas of this CEEC are known in the landscape outside of the Development Footprint, in particular those associated with National Parks. Preliminary assessments have been undertaken on three properties for potential land-based offsets for the Project, which has included desktop review of publicly available vegetation community mapping. The preliminary assessments have shown that the vegetation communities on neighbouring properties are largely consistent with those in the Development Footprint, including vegetation communities associated with the CEEC. Therefore, the CEEC is highly likely to persist in the locality.

Criterion 4: modify or destroy abiotic factors necessary for an ecological community’s survival, including reduction in groundwater levels, or substantial alteration of surface water drainage patterns.

The proposed works will not significantly impact on abiotic factors such as nutrient and water availability.

Criterion 5: cause substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species.

The Project would not significantly change the species composition of the total CEEC occurrence within the surrounding area. Inspection of previously modified DNG forms of this CEEC in the Development Footprint showed that there were imperceptible differences between surrounding vegetation and the modified areas, such as those containing roads or tracks.

Criterion 6: cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:

- 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

A BMP would be developed, which would include weed management protocols. Assessment of priority weeds in the Project Footprint will be undertaken and appropriate management measures to minimise risk of spreading weeds outside of the Development Footprint will be implemented.

Criterion 7: interfere with the recovery of an ecological community.

Preliminary assessments have been undertaken on three properties for potential land-based offsets for the Project, which has included desktop review of publicly available vegetation community mapping. The preliminary assessments have shown that the vegetation communities on neighbouring properties are largely consistent with those in the Development Footprint, including vegetation communities associated with the CEEC. Land-based offsets would provide a mechanism to secure and preserve areas of CEEC in perpetuity, assisting with the recovery effort in the surrounding landscape.

Migratory birds – Satin Flycatcher, Fork-tailed Swift and White-throated Needletail

Criterion 1: substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat for a migratory species

There are no areas of habitat within the Development Footprint which are considered unique or particularly important for migratory species. No large aggregations of migratory species have been recorded within the Development footprint, nor are they expected to occur based on the available habitat within the development footprint. The proposed works is unlikely to modify, destroy or isolate any habitat that is important to a migratory species.

Criterion 2: result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat for the migratory species, or

The Development Footprint does not provide an area of important or unique habitat for a migratory species. The proposed works will involve the construction and operation of a wind farm. Impacts on the environment will be mitigated or controlled through the Biodiversity Management Plan. It is thus unlikely that the action would result in an invasive species becoming established in the Development Footprint.

Criterion 3: seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.

No ecologically significant proportions of a migratory species population have been identified within the development footprint. The action would involve the construction and operation of a wind farm.

The siting of the wind farm has considered known migratory flight patterns and bird utilization, and field surveys did not record species migrating over the Development Footprint. A residual collision risk is present for migratory species, however due to the low numbers of migratory species recorded, this is not likely to have any affect to populations of migratory species within the locality. It is thus considered unlikely that the prosed works will seriously disrupt the lifecycle of an ecologically significant proportion of the population of a migratory species.

Assessment of significance under Section 220ZZ of *Fisheries Management Act 1994*

Southern Purple Spotted Gudgeon (<i>Mogurnda adspersa</i>)		Eel-tailed Catfish population of the Murray-Darling Basin (<i>Tandanus tandanus</i>)	
<p>The Southern Purple Spotted Gudgeon (<i>Mogurnda adspersa</i>) is a small freshwater fish whose Murray-Darling Basin population experienced a severe decline in the 1980s. This species is a benthic species found in rivers, creeks, and billabongs with slow-moving or still water. They prefer cover from aquatic or overhanging vegetation, rocks and snags (DPI 2017). Within the Murray-Darling Basin, it is now confined to sections of the Macquarie, Gwydir, and Border Rivers Catchment, and as these populations are isolated and disconnected from each other, this species is now listed as an endangered species in NSW (DPI 2017).</p>		<p>The Eel-tailed Catfish is an Australian endemic species that was once highly abundant throughout the Murray Darling River system in NSW. Although most riverine populations have declined significantly since the 1970s. They are known to prefer sluggish or still waters and often build nests in still water for breeding. Areas of potential habitat within the Project Site include the streams and small creeks during times of inundation.</p> <p>The closest known record of this species occurs approximately 6 km east of the Project Site in the Cudgegong River, into which Uungula Creek flows (ALA, 2019).</p>	
<p>(a) <i>in the case of a threatened species, whether the action proposed 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</i></p>	<p>The Southern Purple Spotted Gudgeon were collected from Wuuluman Creek in 2016, where it is crossed by Wuuluman Road. This site is adjacent to the western boundary of the Project, and some tributary streams, including Bulls Gully and Dead Horse Gully occur inside the project boundary. In addition, NSW DPI Fisheries mapping indicates potential for this species to occur in most of the creeks on-site, including Oxleys Creek, Ilgerry Creek, Bourkes Creek, Uungula Creek, Guroba Creek, Ben Buckley Creek, and Mitchell Creek.</p> <p>Without targeted surveys or on-site habitat assessments, it is necessary to assume that this species is likely to occur within the boundary of the Project, based on previous collections and DPI Fisheries mapping. The likelihood of this species maintaining a population on-site declines during periods of low rainfall when creeks dry up. Most of the waterways on-site are ephemeral and unsuitable for this species. However, the species is able to persist in isolated pools, such as dams and deep waterholes, and from these can disperse when flow recommences.</p> <p>The main threats to this species include:</p> <ul style="list-style-type: none">• predation by introduced species such as Gambusia (<i>Gambusia holbrooki</i>);• loss of habitat, particularly aquatic plants;• significant fluctuations in water level and flow;• thermal pollution;• increased turbidity and stream bank damage from livestock;• decreased water quality due to agricultural runoff; and• small, isolated populations with limited ability to disperse. <p>The main aspects of the Project that could impact on this include the construction of access tracks, as well as where proposed powerlines cross creeks. Many of the creeks on-site are ephemeral, so impacts can be minimised by constructing tracks during periods of no flow. Creek crossings for all access tracks should comply with DPI Water (2012) and Fairfull (2013). Where construction occurs during periods of flow, then an aquatic ecologist with the proper scientific collection permits, would need to be on-site to conduct pre-construction surveys at any crossing site.</p> <p>Where powerlines cross waterways, underboring should be used in favour of trenching, to minimise impact to this species habitat.</p>	Eel-tailed catfish of the Murray-Darling Basin is an endangered population, so is discussed in b)	
	<p>(b) <i>in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,</i></p>	<p>Not applicable- Southern Purple Spotted Gudgeon is not an endangered population</p>	<p>Life cycle can be impacted by habitat removal or reduced habitat quality. For the population to be at risk of being removed from the local area, impacts would have to be of a magnitude and duration that would inhibit the continual completion of the lifecycle stages. Eel-tailed catfish are able to survive in farm dams, so would be able to persist in dams on-site when creeks are dry.</p> <p>Given that many of the creeks on-site are ephemeral and that the main aspects of the Project that could impact on populations of Eel-tailed Catfish include the construction of access tracks, as well as where proposed powerlines cross creeks, potential impacts can be minimised by constructing tracks during periods of no flow. Creek crossings for all access tracks should also comply with DPI Water (2012) and Fairfull (2013). Where construction occurs during periods of flow, then an aquatic ecologist with the proper scientific collection permits, would need to be on-site to conduct pre-construction surveys at any crossing site. If the measures are taken it is unlikely that the proposal will have a significant impact on the lifecycle of this species.</p>

	Southern Purple Spotted Gudgeon (<i>Mogurnda adspersa</i>)	Eel-tailed Catfish population of the Murray-Darling Basin (<i>Tandanus tandanus</i>)
(c) <i>in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed—</i>	Not applicable- Southern Purple Spotted Gudgeon is not an endangered ecological community.	Not applicable- Eel-tailed catfish of the Murray-Darling Basin is not an endangered ecological community.
i. <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</i>		
ii. <i>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,</i>	Not applicable- Southern Purple Spotted Gudgeon is not an endangered ecological community.	Not applicable- Eel-tailed catfish of the Murray-Darling Basin is not an endangered ecological community.
(d) <i>in relation to the habitat of a threatened species, population or ecological community—</i>	Direct impacts to the Southern Purple Spotted Gudgeon habitat would be restricted to waterway crossings, and the areas immediately upstream and downstream of these sites. Crossings should comply with DPI Water (2012) and Fairfull (2013), and if possible, should be constructed during periods when waterways are dry. If construction occurs during periods of flow, then an aquatic ecologist should be on-site to conduct targeted fish surveys and aquatic habitat assessments. If fish are found in a pool, access tracks should be diverted around these. Areas of significant aquatic vegetation or riparian vegetation should be avoided.	Impacts will be restricted to the proposed stream crossings of the Project Site and potentially modify flow. However, crossings will comply with DPI Water (2012) and Fairfull (2013) to facilitate fish movement at times of flow.
i. <i>the extent to which habitat is likely to be removed or modified as a result of the action proposed,</i>	Secondary impacts may occur as a result of increased turbidity and sedimentation from access tracks. This will be minor if sediment retention traps are constructed alongside roads, and if riparian vegetation is retained.	
ii. <i>whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and</i>	If crossings are constructed during periods of no flow, in reaches without significant aquatic vegetation, and in a manor compliant with DPI Water (2012) and Fairfull (2013), then the v Southern Purple Spotted Gudgeon habitat would not become fragmented or isolated from other areas of habitat.	Construction that complies with DPI Water (2012) and Fairfull (2013) at periods of no flow will not temporarily or permanently fragment or isolate areas of potential habitat.
iii. <i>the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,</i>	Without site inspections at proposed crossing locations, it is not clear what Southern Purple Spotted Gudgeon habitat is present. However, as most crossings are restricted to minor waterways, impacts are likely to be insignificant. If access tracks are required to cross waterways during periods of flow, site-based surveys and habitat assessments should be conducted by an appropriately qualified aquatic ecologist.	Without site inspections at the proposed crossing locations it is difficult to interpret the importance of habitat, however given that the streams are ephemeral and that the nearest record is 6 km downstream, the amount of habitat on-site is likely to be unimportant to the long-term survival of these species.
(e) <i>whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),</i>	The proposed actions are unlikely to have an adverse effect on critical Southern Purple Spotted Gudgeon habitat.	No areas of critical habitat have been registered for this species (accessed 04/03/20).
(f) <i>whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,</i>	<p>The Priority Action Statement for the Southern Purple Spotted Gudgeon (DPI 2019) lists the following recovery actions:</p> <ul style="list-style-type: none"> • Provide distribution information to local councils and determining authorities; • Collate and review existing information; • Raise awareness among community members and stakeholders; • Enhance NRM planning processes to minimise impacts on threatened species; • Rehabilitate habitat, including riparian vegetation restoration, water quality improvement projects, and removal of barriers to fish passage; • Eradicate and control pest species; and • Survey and map current distribution. <p>The proposed action does not contradict any of the recovery actions listed in the Priority Action Statement.</p>	<p>The Priority Action Statement for the Eel-tailed Catfish population of the Murray-Darling Basin (DPI 2019) lists the following recovery actions:</p> <ul style="list-style-type: none"> • Advice to consent and determining authorities; • Collate and review existing information; • Community and stakeholder liaison, awareness and education; • Compliance / enforcement; • Enhance, modify or implement NRM planning processes to minimize adverse impacts on threatened species; • Habitat rehabilitation; • Pest eradication and control; and • Research/monitoring, stocking/translocation, survey/mapping. <p>The proposed action does not contradict any of the recovery actions listed in the Priority Action Statement.</p>
(g) <i>whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.</i>	<p>The current proposal contains two potential key threatening processes that are relevant to this species:</p> <ul style="list-style-type: none"> • Degradation of native riparian vegetation along New South Wales water courses; and • Installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams. <p>Waterway crossings complying with DPI Water (2012) and Fairfull (2013) will not alter natural flow to streams to the degree that will inhibit this species. In addition, degradation to riparian vegetation is predicted to be minor, and restricted to the proposed stream crossings.</p>	<p>The current proposal contains two key threatening processes that are relevant to this species:</p> <ul style="list-style-type: none"> • Degradation of native riparian vegetation along New South Wales water courses; and • Installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams. <p>Waterway crossings complying with DPI Water (2012) and Fairfull (2013) will not alter natural flow to streams to the degree that will inhibit this species. In addition, degradation to riparian vegetation is predicted to be minor, and restricted to the proposed stream crossings.</p>

	Western population of Olive Perchlet (<i>Ambassis agassizii</i>)	Lowland Darling River aquatic ecological community
	<p>The western population of Olive Perchlet were once widespread throughout the Murray-Darling system but has since suffered serious decline. The population is now restricted to a few sites in the Darling River drainage and an isolated population in the central Lachlan catchment. Olive Perchlet can inhabit creeks, rivers, swamps and ponds and are usually found in slow flowing or still waters. These fish use sheltered areas such as overhanging vegetation, logs, boulders, macrophyte beds, and usually disperse to feed at night.</p> <p>Although there are no records from within 10 km of the site, indicative distributions suggest that this species may could be present in the Macquarie River, south of the development site (DPI, 2013), so could may have extended into the project area via one of the tributary streams.</p>	<p>The aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River is listed as an Endangered Ecological Community (EEC) under Schedule 4, Part 3 of the Fisheries Management Act 1994 (FM Act). The community occurs in lowland riverine environment, characterised by meandering channels and a variety of habitats, including deep channels, pools, wetlands, gravel beds and flood plains (DPI, 2007).</p> <p>This EEC provides important habitat to a range of vertebrate and invertebrate aquatic species including some listed as threatened under the FM and EPBC Acts.</p>
(a) <i>in the case of a threatened species, whether the action proposed 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</i>	Olive Perchlet is an endangered population, so is discussed in b)	Not applicable – the Lowland Darling River aquatic ecological community is not a threatened species.
(b) <i>in the case of an endangered population, whether the action proposed is likely to have an adverse effect on the life cycle of the species that constitutes the endangered population such that a viable local population of the species is likely to be placed at risk of extinction,</i>	<p>Given that many of the creeks on-site are ephemeral and that the main potential impacts from the proposed development include the construction of access tracks and powerline crossings, potential impacts can be minimised by constructing tracks during periods of no flow. Creek crossings for all access tracks should also comply with DPI Water (2012) and Fairfull (2013). Where construction occurs during periods of flow, then an aquatic ecologist with the proper scientific collection permits, would need to be on-site to conduct pre-construction surveys at crossing sites.</p> <p>If the above measures are taken it is unlikely that the proposal will have a significant impact on the lifecycle of this species.</p>	Not applicable – the Lowland Darling River aquatic ecological community is not an endangered population.
(c) <i>in the case of an endangered ecological community or critically endangered ecological community, whether the action proposed—</i> <i>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</i>	Not applicable- Western population of Olive Perchlet is not an endangered ecological community.	<p>Impacts to this EEC are likely to be contained to where watercourse crossings are constructed within the Project Site and immediately upstream and downstream of these crossings. As a result of this limited area of impact, the extent of this EEC within the site would be impacted only where these crossings are proposed. Impacts to this EEC would be limited and not significant, as watercourse crossings would be designed to prevent blockage of fish passage, in accordance with Policy and guidelines for fish habitat conservation and management (Fairfull, 2013) and Guidelines for watercourse crossings on waterfront land (DPI Water, 2012). The EEC covers a large extent of the Murray Darling Basin and therefore the limited area that the proposed works would impact would not result in risk of extinction of the local occurrence.</p>
<i>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,</i>	Not applicable- Western population of Olive Perchlet is not an endangered ecological community.	<p>The proposed works are unlikely to modify the composition of this EEC, as they will not change the geomorphological features of the watercourses (e.g. will not remove the pools and riffles and other habitat features that may exist within these watercourses). Crossings are not to be built on watercourse bends or meanders to reduce the chance of exacerbating erosion in these areas. Crossings are to be designed and constructed with the existing environment in mind and be sympathetic to the needs of fish migration. Therefore, this EEC is unlikely to be substantially and adversely modified by the proposed works.</p>
(d) <i>in relation to the habitat of a threatened species, population or ecological community—</i> <i>i. the extent to which habitat is likely to be removed or modified as a result of the action proposed,</i>	Impacts will be restricted to the proposed stream crossings. However, crossings will comply with DPI Water (2012) and Fairfull (2013) to facilitate fish movement at times of flow.	<p>The extent of modification to this habitat in the form of new watercourse crossings is currently unknown as the width of watercourse crossings and trenches required for installation of underground cables across watercourses is not currently available. However, if these watercourse crossings and cable crossings are designed and constructed in accordance with appropriate guidelines, then the extent to which the habitats are modified is likely to be minimal.</p>
<i>ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and</i>	Construction that complies with DPI Water (2012) and Fairfull (2013) at periods of no flow will not temporarily or permanently fragment or isolate areas of potential habitat.	<p>The proposed works are unlikely to fragment or isolate the habitat that is part of the Lowland Darling River EEC as crossings for vehicles and cables are to be designed and constructed that allow for continued fish migration up and downstream of these areas. For larger crossings such as culverts, habitat features such as riffles can be built into these structures to ensure that there is no net loss of fish habitat. Therefore, the habitat within this EEC in the Site is unlikely to become fragmented or isolated from other areas of habitat.</p>

	Western population of Olive Perchlet (<i>Ambassis agassizii</i>)	Lowland Darling River aquatic ecological community
iii. <i>the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species, population or ecological community in the locality,</i>	Without site inspections at the proposed crossing locations it is difficult to interpret the importance of habitat, however given that the streams are ephemeral, no records exist within 10 km of the Project Site boundary and that much of the overhanging riparian vegetation has been cleared for agriculture, the habitat is considered unimportant to the long-term survival of these species.	The habitat within the site has been described as in poor to moderate condition as a result of historical land use practices including agriculture. Therefore, the importance of any habitat that would be modified to the long-term survival of the EEC and the species which rely on it within the Project Site is unlikely to be high.
(e) <i>whether the action proposed is likely to have an adverse effect on critical habitat (either directly or indirectly),</i>	No areas of critical habitat have been registered for this species (accessed 04/03/20).	No critical habitat has been identified for this EEC
(f) <i>whether the action proposed is consistent with the objectives or actions of a recovery plan or threat abatement plan,</i>	<p>The Priority Action Statement for the Western Olive Perchlet population (DPI 2019) lists the following recovery actions:</p> <ul style="list-style-type: none"> • Advice to consent and determining authorities; • Collate and review existing information; • Community and stakeholder liaison, awareness and education; • Compliance / enforcement; • Enhance, modify or implement NRM planning processes to minimize adverse impacts on threatened species; • Habitat rehabilitation; • Pest eradication and control; and • Research / monitoring, Stocking / translocation, Survey / mapping. <p>The proposed action does not contradict any of the recovery actions listed in the Priority Action Statement.</p>	A priorities action statement has been prepared for the Lowland Darling River aquatic endangered ecological community. None of the recovery actions listed as part of this statement are relevant to the proposed development.
(g) <i>whether the action proposed constitutes or is part of a key threatening process or is likely to result in the operation of, or increase the impact of, a key threatening process.</i>	<p>The current proposal contains two key threatening processes that are relevant to this species:</p> <ul style="list-style-type: none"> • Degradation of native riparian vegetation along NSW water courses; and • Installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams. <p>Waterway crossings complying with DPI Water (2012) and Fairfull (2013) will not alter natural flow to streams to the degree that will inhibit this species. In addition, degradation to riparian vegetation is predicted to be minor, and restricted to the proposed stream crossings.</p>	<p>Key threatening processes listed under Schedule 6 of the FM Act are as follows:</p> <ul style="list-style-type: none"> • Degradation of native riparian vegetation along New South Wales water courses; • Hook and line fishing in areas important for the survival of threatened fish species; • Human-caused climate change; • Installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams; • Introduction of fish to waters within a river catchment outside their natural range; • Introduction of non-indigenous fish and marine vegetation to the coastal waters of NSW; • Removal of large woody debris from NSW rivers and streams; and • The current shark meshing program NSW waters. <p>The proposed activities associated with the construction and operation of the wind farm do not constitute any of these key threatening processes. The watercourse crossing structures that will be installed on waterways within the Site will be designed in accordance with NSW Fisheries and Natural Resources Access Regulator (NRAR) guidelines and therefore will not alter natural flow regimes of watercourses within the Site.</p>

References

ALA (2019) Atlas of living: Spatial Portal. Retrieved from <https://spatial.ala.org.au/?q=lsid:urn:lsid:biodiversity.org.au:afd.taxon:f4138d26-9594-49ed-b3a5-b1851a634108>

Department of the Environment (2016). National Recovery plan for the Regent Honeyeater (*Anthochaera phrygia*). Available from: <http://www.environment.gov.au/system/files/resources/286c0b52-815e-4a6c-9d55-8498c174a057/files/national-recovery-plan-regent-honeyeater.pdf>

Department of the Environment (2013). Matters of National Environmental Significance. Available from: https://www.environment.gov.au/system/files/resources/42f84df4-720b-4dcf-b262-48679a3aba58/files/nes-guidelines_1.pdf

Department of sustainability and Environment (2011). National Recovery plan for the Superb Parrot *Polytelis swainsonii*. Available from <http://www.environment.gov.au/system/files/resources/4d6611e8-0965-48f1-940d-1c32ec0e2b88/files/polytelis-swainsonii-recovery-plan.pdf>

Department of Primary Industries (2007) Primefact 173, Endangered Ecological Community - Lowland Darling River Aquatic Ecological Community. Retrieved 2 March 2020 from https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0003/634557/Lowland-Darling-River-aquatic-ecological-community.pdf DPI Water (2012) Controlled activities on waterfront land: Guidelines for watercourse crossings on waterfront land. NSW Department of Primary Industries.

DPI NSW (2013) Primefact Olive Perchlet (western population) -*Ambassis agassizii*.

DPI (2017). Southern Purple Spotted Gudgeon- *Mogurnda adspersa*. Primefact 1275, Second Edition. DPI Threatened Species Unit.

Fairfull, S. (2013). Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (2013 update). NSW Department of Primary Industries.

National Parks and Wildlife Service & Wildlife profiles Pty Ltd (1999). National Recovery plan for the Striped Legless Lizard (*Delma impar*) 1999-2003. Available from: <http://www.environment.gov.au/resource/national-recovery-plan-striped-legless-lizard-delma-impar-1999-2003>

Saunders, D. Tzaros, C. (2011). National Recovery Plan for the Swift Parrot (*Lathamus discolor*). Available from: <http://www.environment.gov.au/system/files/resources/c3e20a20-8122-4a9c-bd06-455ea7620380/files/lathamus-discolor-swift-parrot.pdf>