

Roads and Traffic Authority

Pacific Highway Upgrade - Oxley Highway to Kempsey Flora and Fauna Working Paper

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1. Introduction

This Working Paper addresses the terrestrial and aquatic ecology impacts associated with the upgrade of the Pacific Highway from the Oxley Highway to Kempsey ('the Proposal') and has been prepared as a technical document to support the *Oxley Highway to Kempsey Upgrading the Pacific Highway Environmental Assessment* (GHD 2010).

The objective of the Working Paper is to provide an ecological assessment of the impact of the Proposal pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The working paper also provides an assessment of the significance of impacts on 'Matters of National Environmental Significance' pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). As a result of this assessment, particular areas where mitigation may be required have been identified and management measures proposed so as to minimise the impacts of the Proposal.

1.1 Overview

The proposed upgrade of the Pacific Highway between the Oxley Highway and Kempsey ('the Proposal') is part of the Pacific Highway Upgrade Program, being implemented by the New South Wales (NSW) Roads and Traffic Authority (RTA) and the Australian Government.

The Proposal would commence approximately 700 metres north of the Oxley Highway interchange, tying in with the existing dual carriageways to the south, and continue northwards to tie in at Stumpy Creek with the dual carriageways of the proposed Kempsey to Eungai Pacific Highway upgrade. At the northern end of the Proposal, the eastern service road would extend approximately 320 metres further to the north of Stumpy Creek to tie in with the southern interchange of the proposed Kempsey to Eungai upgrade.

The majority of the Proposal would require duplication of the existing highway. Two main sections of the Proposal would deviate from the alignment of the existing highway. These are in the vicinity of the Hastings River and the Wilson River. The existing highway would be retained wherever possible for use as a service road or local road connection.

The general features of the Proposal are:

- Approximately 37 kilometres of four-lane dual carriageway (two lanes in each direction) with a wide median to allow a future upgrade to six lanes.
- A new alignment across the Hastings River and Wilson River floodplains and minor realignment within Maria River State Forest.
- 100 year average recurrence interval flood immunity, with the exception of the Wilson River floodplain where the road embankment would be above the 20 year average recurrence interval flood level.
- A bypass of Telegraph Point. Access to and from Telegraph Point would be provided by a new grade separated interchange in the area of Blackmans Point Road south of Telegraph Point and a half interchange in the area of Haydons Wharf Road north of Telegraph Point.
- Overbridges located to the south of Sancrox Road, at Bill Hill Road, Mingaletta Road, Wharf Road, Kundabung Road and Middle Gate Road.

- The existing Pacific Highway near Blackmans Point Road and Yarrabee Road passing under the Proposal.
- Major cuttings through Cooperabung Hill.
- New major bridge structures for the Hastings River and Wilson River crossings, and the crossing of the North Coast Railway to the north of the Wilson River.
- Smaller bridges for a number of creek crossings.
- Provision of two new rest areas south of Mingaletta Road.
- Provision of a service road network using sections of the existing highway, existing local roads and new roads.

Development of the Proposal commenced in December 2004 and has occurred in three key phases. Each of these phases has involved community and stakeholder consultation, desktop studies and field investigations to examine environmental, social, economic, traffic and transportation opportunities and constraints. The three phases have been:

- Route options development.
- Preferred route selection.
- Environmental assessment.

When deciding on the location of the preferred option, a thorough assessment process was completed in partnership with the community and other stakeholders, and in recognition of the principles of ecologically sustainable development. This was done to ensure that the preferred option achieved a balance between social, environmental, engineering and economic constraints and opportunities.

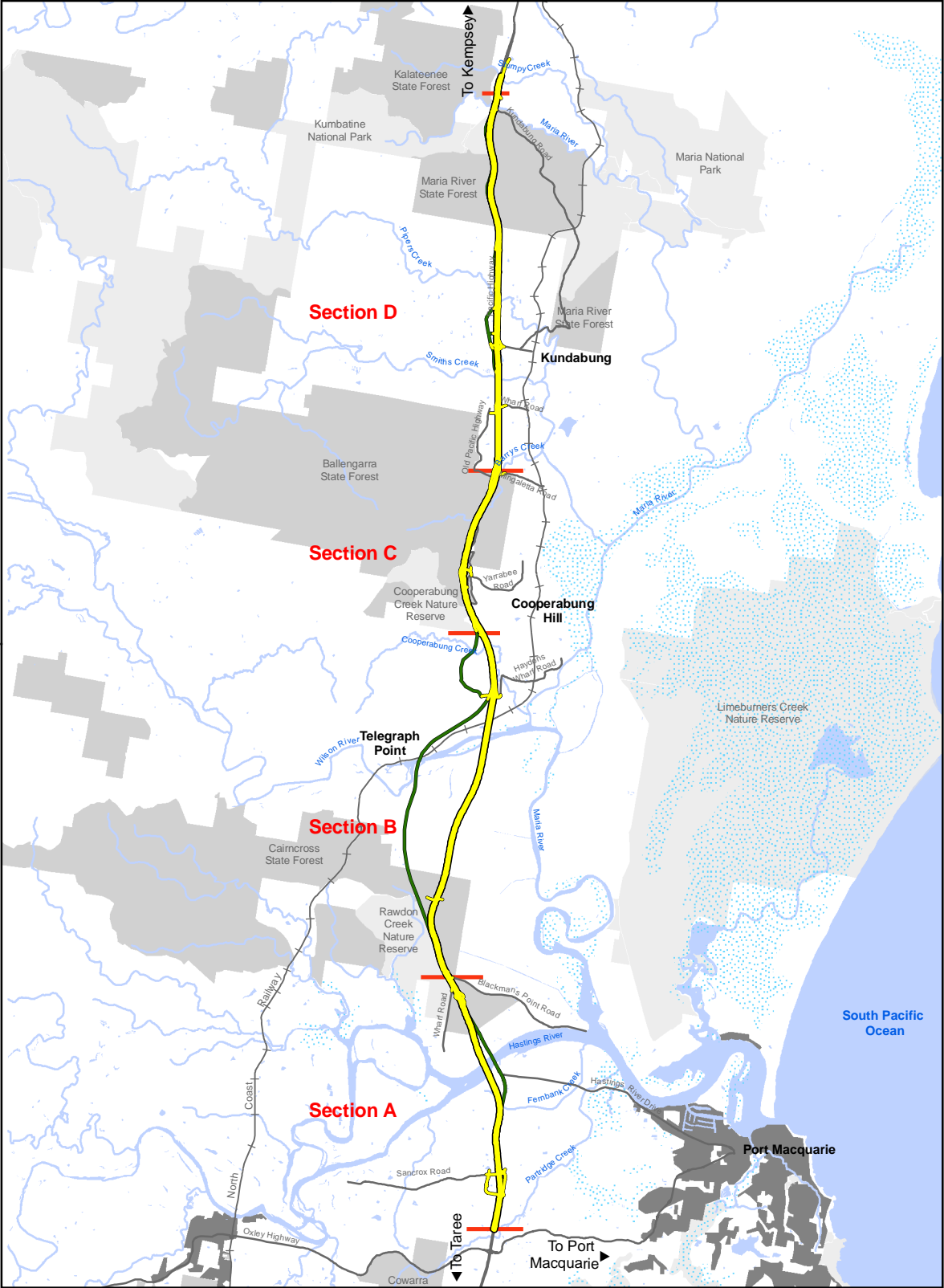
1.2 Regional and local context

The Proposal is situated within the North Coast Bioregion as defined in the Interim Biogeographic Regionalisation of Australia or IBRA (Thackway and Cresswell 1995). This bioregion follows the east coast of New South Wales (NSW) from Raymond Terrace to the Queensland border. Within the North Coast Bioregion, the Proposal is located within the Macleay Hastings Catchment Management Authority sub-region.

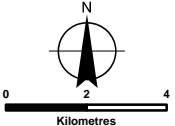
The Proposal is located within the Port Macquarie-Hastings and Kempsey local government areas. The location of the Proposal is shown in **Figure 1**.

The area through which the Proposal passes contains a number of state forests, nature reserves, and wetlands listed under *State Environmental Planning Policy No. 14 – Coastal Wetlands*, as well as key habitat and wildlife corridors, as mapped by DECC (Scotts 2003). Land use within the study locality generally consists of residential, rural, commercial, industrial, state forests, national parks and reserves. Rural land use, state forests and conservation areas are the dominant land uses.

Figure 1 Location of the Proposal



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|------------------------------------|---------------|-----------------------------------|
| The Proposal | — Roads | ■ National parks, Nature reserves |
| — Upgraded Highway | — Railway | ■ State forests |
| — Service Road (existing facility) | — Watercourse | ■ Built-up urban areas |
| — Section break | ■ Wetlands | |



1.3 Legislative context

1.3.1 Environmental Planning and Assessment Act 1979

The RTA is seeking project approval for the Proposal under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Minister for Planning has declared under Section 75B of the EP&A Act, by Order published in NSW Government Gazette No. 175 on 8 December 2006, that development for the purpose of upgrading certain segments of the Pacific Highway is a project to which Part 3A of the EP&A Act applies. The Oxley Highway to Kempsey Upgrade is one of the declared segments under the order and is therefore a project to which Part 3A applies. The Proposal has been declared as a critical infrastructure project under Section 75C of the EP&A Act by the Minister for Planning under an Order published in NSW Government Gazette No. 175 on 8 December 2006.

The Proposal requires the approval of the Minister for Planning.

This assessment has been undertaken in accordance with the Draft Threatened Species Part 3A Assessment Guidelines prepared by the Department of Environment and Conservation and the Department of Primary Industries (DEC/DPI 2005).

Under Section 75U of the EP&A Act, the following authorisations are not required for a project approved under Part 3A:

- The concurrence under Part 3 of the *Coastal Protection Act 1979* of the Minister administering that Part of the Act.
- A permit under section 201, 205 or 219 of the *Fisheries Management Act 1994*.
- An authorisation referred to in section 12 of the *Native Vegetation Act 2003* (or under any Act to be repealed by that Act) to clear native vegetation or State protected land.
- A permit under Part 3A of the *Rivers and Foreshores Improvement Act 1948*.
- A water use approval under section 89, a water management work approval under section 90 or an activity approval under section 91 of the *Water Management Act 2000*.

1.3.2 Threatened Species Conservation Act 1995

The *Threatened Species Conservation Act 1995* (TSC Act) provides legal status for biota of conservation significance in NSW. The Act aims to, *inter alia*, 'conserve biological diversity and promote ecologically sustainable development'.

The objectives of the Act are to:

- Conserve threatened species, populations, ecological communities and their habitats.
- Promote their recovery.
- Manage the processes that threaten or endanger them.

The Act provides for:

- The listing of 'threatened species, populations and ecological communities', with endangered species, populations and communities listed under Schedule 1, 'critically endangered' species and communities listed under Schedule 1A, vulnerable species and communities listed under Schedule 2.

- The listing of 'key threatening processes' (under Schedule 3).
- The preparation and implementation of Recovery Plans and Threat Abatement Plans.

The Proposal would have impacts on threatened species, ecological communities and their habitats listed under the TSC Act. An assessment of the impacts of the Proposal on threatened species, ecological communities and their habitats has been undertaken.

No 'interim protection orders' or 'stop work orders' as defined in the TSC Act may be issued in respect of an approved critical infrastructure project.

The TSC Act provides for the establishment of a biodiversity banking and offsets scheme; whereby the Minister may approve the project subject to a condition that requires the RTA to "*acquire and retire*" (as defined in the TSC Act) biodiversity credits under that scheme.

Ordinarily a licence under section 91 of this Act is needed to undertake an activity that would harm a threatened species, so as to avoid committing an offence against section 118A of the *National Parks and Wildlife Act 1974*. However, an approval under Part 3A of the EP&A Act is a defence against what would otherwise be an offence against section 118A of the *National Parks and Wildlife Act 1974*.

The TSC Act has been addressed through:

- Desktop review to determine the threatened species, populations or ecological communities that have been previously recorded within the locality of the Proposal and hence could occur subject to the habitats present.
- Targeted field surveys for threatened species and endangered ecological communities (EEC) listed under the Act.
- Development of suitable impact mitigation and environmental management measures for threatened species and EECs, where required.
- Assessment of potential impacts on threatened species and EECs.

1.3.3 Fisheries Management Act 1994

The *Fisheries Management Act 1994* (FM Act) aims to conserve, develop and share the fishery resources of the State for the benefit of present and future generations. The FM Act lists threatened species of freshwater fish, aquatic invertebrate and macroinvertebrate species, endangered populations and aquatic ecological communities, protected aquatic species and key threatening processes. Permits under sections 201, 205 or 219 of the FM Act are not required for approved Part 3A projects.

The Proposal has the potential to impact species listed in the FM Act. An assessment of the potential impacts of the Proposal on threatened species, populations or ecological communities listed under the FM Act, as well as protected marine vegetation, has been undertaken.

The FM Act has been addressed through:

- Desktop review to determine listed threatened species, populations or ecological communities listed, as well as protected marine vegetation, of potential relevance to the Proposal.
- Targeted field surveys for species and ecological communities and protected marine vegetation listed under the FM Act.

- Development of suitable impact mitigation and environmental management measures for threatened species and marine vegetation, where required.
- Assessment of potential impacts on listed species and ecological communities and protected marine vegetation as relevant to the Proposal.

1.3.4 National Parks and Wildlife Act 1974

This Act provides for:

- Conservation of nature, including, the conservation of habitat, biological diversity, landforms and landscapes.
- Conservation of objects, places or features of cultural value within the landscape, including places, objects and features of significance to Aboriginal people and the people of NSW.
- Fostering public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation.
- Providing for the management of land reserved under this Act in accordance with the management principles applicable for each type of reservation.

The Proposal passes through a small section of the Cooperabung Creek Nature Reserve. An assessment of the Proposal's impacts on dedicated conservation areas, habitat, biological diversity, landforms and landscapes has been undertaken as part of this assessment.

A discussion on the Proposal's requirements for the acquisition of a section of the Cooperabung Creek Nature Reserve is provided in the Environmental Assessment.

1.3.5 Noxious Weeds Act 1993

This Act outlines procedures for the definition, declaration, and control of noxious weeds throughout the State. Noxious weeds recorded in the study area have been identified and appropriate management measures proposed.

1.3.6 State environmental planning policies

State Environmental Planning Policy No. 14 – Coastal Wetlands

State Environmental Planning Policy No. 14 – Coastal Wetlands aims to ensure that coastal wetlands are preserved and protected for environmental and economic reasons.

Two areas associated with the Proposal's crossing at the Wilson River are listed under this policy. An assessment of the Proposal's impact on these wetlands has been undertaken as part of this assessment and appropriate management measures proposed.

State Environmental Planning Policy No. 26 – Littoral Rainforests

State Environmental Planning Policy No. 26 – Littoral Rainforests provides a mechanism for the consideration of applications for development that is likely to damage or destroy littoral rainforest areas with a view to the preservation of those areas in their natural state. The Proposal does not impact on any land identified under this policy as a littoral rainforest.

State Environmental Planning Policy No. 44 - Koala Habitat Protection

State Environmental Planning Policy No. 44 – Koala Habitat Protection encourages the conservation and management of natural vegetation areas that provide habitat for koalas to ensure permanent free-living populations will be maintained over their present range. The policy contains prescriptions for the consideration and assessment of 'potential koala habitat' and 'core koala habitat' for development activities within local government areas listed on Schedule 1. It also requires preparation of plans of management before development consent can be granted in areas of core koala habitat.

The Proposal is subject to assessment under Part 3A of the EP&A Act. Under Part 3A the approval requirements of *State Environmental Planning Policy No. 44 – Koala Habitat Protection* do not apply to the Proposal. However the RTA has adopted an approach that has seen the relevant objectives of the policy considered.

An assessment of the Proposal's impact on the local koala population and associated habitat has been undertaken as part of this assessment and appropriate management measures proposed.

State Environmental Planning Policy No. 71 – Coastal Protection

State Environmental Planning Policy No. 71 – Coastal Protection aims to protect and manage the natural, cultural, recreational and economic attributes of the New South Wales coast, manage the coastal zone in accordance with the principles of ecologically sustainable development, and encourage a strategic approach to coastal management.

The Proposal is within the coastal zone for approximately 2 kilometres where it crosses the Hastings River. The Proposal has been developed and assessed in accordance with the principles of ecologically sustainable development and has had regard to the aims and matters for consideration set out in the policy.

1.3.7 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) establishes a requirement for Commonwealth environmental assessment and approval for actions that are likely to have a significant impact on matters of national environment significance, the environment on Commonwealth land or actions taken on Commonwealth land.

In January 2007 the Commonwealth and NSW Governments signed a Bilateral Agreement which accredits the assessment regimes under Part 3A, Part 4 and Part 5 of the EP&A Act for assessment purposes under the EPBC Act. The Bilateral Agreement applies only to proposals that the Commonwealth Minister has determined are controlled actions under the EPBC Act, with the exception of nuclear actions (DEWHA 2007).

The EPBC Act identifies seven matters of national environmental significance:

- World heritage properties.
- National heritage places.
- Wetlands of international importance (Ramsar wetlands).
- Threatened species and ecological communities.
- Migratory species.
- Commonwealth marine areas.
- Nuclear actions (including uranium mining).

The *Administrative Guidelines for the EPBC Act* (Department of the Environment and Heritage 2006) set out criteria intended to assist in determining whether an action is a controlled action and hence requires approval. In particular, the Guidelines contain criteria for determining whether a proposed action is likely to have a 'significant impact' on a matter of national environmental significance. Should the proponent deem the proposal likely to have a significant impact on a matter of national environmental significance, a referral to the Commonwealth Minister is required, to obtain a determination as to whether the proposal is a 'controlled action' requiring Commonwealth approval.

This working paper addresses the following questions posed in the Guidelines for assessing whether a proposed action is a controlled action as defined in the EPBC Act:

- Are there any matters of national environmental significance located in the area of the proposed action?
- Considering the proposed action at its broadest scope (that is, considering all stages and components of the action, and all related activities and infrastructure), is there potential for impacts, including indirect impacts, on matters of national environmental significance?
- Are there any proposed measures to avoid or reduce impacts on matters of national environmental significance (and if so, is the effectiveness of these measures certain enough to reduce the level of impact below the 'significant impact' threshold)?
- Are any impacts of the proposed action on matters of national environmental significance likely to be significant impacts?

1.4 Scope of the working paper

The specific aims of this assessment are to:

- Address the Director General's environmental assessment requirements in relation to flora and fauna.
- Identify and describe attributes of the existing environment of the study area, including type and condition of vegetation communities and habitats.
- Determine the occurrence or likelihood of occurrence of threatened species, populations ecological communities and their habitats listed under the TSC Act, FM Act and EPBC Act within the study area.
- Assess the significance of impacts on the above in accordance with Part 3A of the EP&A Act and EPBC Act threatened species assessment requirements.
- Identify measures to avoid, minimise, mitigate and offset impacts on biodiversity values of the study area.

The assessment made in this report draws on information obtained from all previous assessments carried out for the Proposal (ie route development, preferred route selection and concept design phases).

1.5 Working paper contributors

Detailed ecological surveys have been undertaken throughout the route development, preferred route selection and concept design phases for the Proposal and have been reviewed in the preparation of this working paper, and also form the basis of the assessment and field survey for this working paper. These include:

- Preliminary Terrestrial Flora and Fauna Assessment – Working Paper (Ecotone Ecological Consultants 2006a). This desktop report provided an overview of the terrestrial ecological characteristics within a corridor up to 3 kilometres wide surrounding the existing Pacific Highway to assist with identification and assessment of feasible route options.
- Preliminary Terrestrial Flora and Fauna Assessment: Advanced Investigations – Working Paper (Ecotone Ecological Consultants 2006a). This report documents field surveys undertaken to identify significant flora and fauna features within sections of the four identified route options that diverge and follow significantly different alignments and of a refinement of a section of the orange route option. Field surveys were undertaken within a 250 metre corridor, extending 125 metres either side of the centre line of each route option and involved assessment of vegetation type, extent and conservation status and fauna habitat assessment.
- Preliminary Aquatic Flora and Fauna Assessment Report (HWR Ecological 2005b). This desktop report provided an overview of the aquatic ecological characteristics within a corridor up to 3 kilometres wide surrounding the existing Pacific Highway to assist with identification and assessment of feasible route options.
- Aquatic Flora and Fauna Assessment Report – Floodplain Investigation (HWR Ecological 2005a). This report provided an overview of the ecological characteristics of the Wilson River floodplain (Telegraph Point) and the Hastings River floodplain (Fernbank Creek) and potential impacts on flora and fauna of aquatic, floodplain and riparian habitats with respect to four identified route options. It involved desktop review and field surveys, including vegetation quadrats and transects and fauna habitat transects.
- Aquatic Flora and Fauna Assessment Report – Riparian Surveys, Wilson River (HWR Ecological 2006). This report provided an overview of the ecological characteristics of riparian habitats of the Wilson River with respect to four identified route options. It involved desktop review and field surveys, including vegetation quadrats and transects and fauna habitat transects.
- Supplementary Aquatic Flora and Fauna Assessment Report – Refined Orange Option, Section B (HWR Ecological 2006). This desktop review provided an assessment of the potential ecological impacts associated with the refined orange route option on aquatic and floodplain flora and fauna in Section B of the Proposal, extending north of the intersection with Blackmans Point Road to the northern intersection with Cooperabung Drive.

Subsequent to these studies, additional terrestrial flora and fauna fieldwork and reporting was undertaken by Ecotone Ecological Consultants, supported by supplementary terrestrial flora, fauna and aquatic fieldwork and reporting undertaken by GHD. In addition, HWR Ecological have provided additional inputs in relation to groundwater dependent ecological communities.

This report is predominantly an Ecotone Ecological Consultants report with additional information from the HWR Ecological and GHD investigations.

1.6 Report structure

The structure and content of this report is as follows:

- Chapter 1 – Introduction.
- Chapter 2 – Methods. Details the desktop review, terrestrial and aquatic field survey and assessment methods.
- Chapter 3 – Description of the existing environment. Describes the existing environment, including vegetation communities, terrestrial flora and fauna, terrestrial and aquatic habitats and aquatic fauna.
- Chapter 4 – Impacts on biodiversity. Describes the potential impacts of the Proposal on biodiversity, including loss and disturbance of vegetation and habitats and impacts on threatened species and ecological communities.
- Chapter 5 – Assessment of significance of impacts. Summarises the findings of the assessments of significance of impacts on threatened species, endangered ecological communities and their habitats following the requirements of the Part 3A of the EP&A Act and the EPBC Act.
- Chapter 6 – Management and mitigation. Describes measures implemented to avoid, minimise, mitigate and offset impacts on biodiversity values.
- Chapter 7 – Conclusions. Summarises the key findings and addresses key thresholds pursuant to DEC/DPI (2005) Part 3A threatened species assessment guidelines with respect to the Proposal.
- Chapter 8 – References.