



PORT STEPHENS
COUNCIL

Ecological Impact Assessment Guideline



Contents

Glossary and Abbreviations	3
About this Guideline	5
1. Introduction	7
1.1 Study area and subject site	7
1.2 Project description	7
2. Legislative context.....	10
2.1 Legislation	10
2.2 Previous approvals or consents.....	11
3. Methods	12
3.1 Personnel	12
3.2 Database searches and literature review.....	12
3.3 Flora and Fauna Survey	13
3.4 Likelihood of occurrence.....	15
3.5 Survey limitations.....	17
4. Existing environment.....	18
4.1 Database & literature review.....	18
4.2 Flora	18
4.3 Fauna	19
5. Impact assessment	21
5.1 Impact Footprint.....	21
5.2 Impact Assessment	22
5.3 Key threatening processes	23
6. Mitigation measures and key recommendations	24
6.1. Impact minimisation.....	24
6.2 Mitigation measures.....	24
7. Conclusion	26
7.1. Conclusion.....	26

Glossary and Abbreviations

A list of abbreviations referred to in this guideline:

Abbreviations	Full text
BC Act	NSW Biodiversity Conservation Act 2016
CKPoM	Port Stephens Comprehensive Koala Plan of Management (2000)
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
ha	Hectares
PCT	Plant community type
GPS	Global Positioning System
IBRA	Interim Biogeographic Regionalisation of Australia

List of terms requiring further explanation:

Glossary	Explanatory text
Subject site	The area directly affected by the proposal. The subject site includes the footprint of the development and any ancillary works, facilities, accesses or hazard reduction zones that support the construction or operation of the development or activity.
Study area	The subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly. The study area should extend as far as is necessary to take all potential impacts into account.
Locality	The region surrounding the study area, typically a 10 km radius from the study area.
Direct impacts	Those impacts directly affecting the habitat of species and ecological communities and of individuals using the study area such as vegetation or tree clearing.
Indirect impacts	Those impacts which occur when project-related activities affect species or ecological communities in a manner other than direct loss within the study area. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas.
Cumulative impacts	The combined, incremental impacts of past, present and anticipated future actions within a regional setting.

DOCUMENT TRACKING

Version No.	Document Author	Reviewed by	Approved by	Date
1 – Flora and Fauna Survey Guideline	Eco Logical Australia and Port Stephens Council	Port Stephens Council	Port Stephens Council	2021
2 – Ecological Impact Assessment Guideline	Eco Logical Australia and Port Stephens Council	Port Stephens Council	Port Stephens Council	14 February 2024

Acknowledgement

This document is based on the Flora and Fauna Management Plan and Survey Template and Guidelines developed in by Eco Logical Australia in collaboration with Port Stephens Council.

About this Guideline

Purpose

The purpose of this Ecological Impact Assessment (EIA) Guideline is to guide the preparation of ecological assessments to ensure that information provided to Port Stephens Council adequately identifies and assesses the ecological impacts of the proposed development; including all cumulative, direct and indirect impacts and any other clearing required to facilitate the development.

Application of the Ecological Impact Assessment Guideline

The information requirements of this EIA Guideline may not suit all developments and may be adapted to suit the complexity of the proposed development. The information requirements of this EIA Guideline is not a comprehensive list of requirements and should be considered as a guide of the minimum information required.

This EIA Guideline may be used to inform preparation of ecological assessments required for Development Applications under Part 4 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act):

- where the Biodiversity Offset Scheme does not apply or a test of significance is required to determine whether the scheme applies in accordance with the NSW Biodiversity Conservation Act 2016 (BC Act) and
- where Part B1 or B2 of the Port Stephens Development Control Plan applies

Interpreting the Ecological Impact Assessment Guideline

The coloured text throughout the EIA Guideline details the content requirements:

- black is guidance text for the purposes of interpreting information requirements
- **green text** provides an example to support and guide content when undertaking works under the guideline.

The advice provided in this EIA Guideline is for guidance purposes only, and the author should undertake their own review of legislative changes and assessment of best practice.

An EIA should include the following sections:

- Introduction
- Legislative context
- Methods

- Existing environment
- Impact assessment
- Mitigation measures and key recommendations
- Conclusion

These sections are described in more detail below.

1. Introduction

The information provided in the introduction is important in helping Council understand the context of the Ecological Impact Assessment, the proposal and its potential impacts.

Section Reference 1	Recommended content
1.1 Study area and subject site	<p>A. Provide a description of the study area (lot) and subject site (impact footprint area) including:</p> <ul style="list-style-type: none"> • Suburb and address of the site • Site size or area (the subject lot and also development clearing footprint) • NSW Interim Biogeographic Region the subject site is located within i.e. either NSW North Coast or NSW Sydney Basin Bioregions • Discuss the landscape context of the site (Mitchell landscapes, proximity to nearby significant features such as national parks, wetlands or waterbodies etc.) • Identify any development/ land uses that currently exist at the subject site such as residential, agricultural or commercial uses • Identify historical development/ land uses at the subject site such as former sand mining, agriculture, Forestry or other. <p>B. Provide a site locality figure showing the context of the site's location within the region.</p>
1.2 Project description	<p>Provide an overview of the proposed project including:</p> <p>A. A description of the proposal which identifies the key features of the development including but not limited to; the proposal type, size, ancillary features, staging etc.</p> <p>B. A summary of the proposed construction, operational and maintenance activities that have the potential to impact on biodiversity values within the study area including:</p> <ul style="list-style-type: none"> • any construction activities such as: <ul style="list-style-type: none"> ○ earthworks including excavations, retaining or filling ○ vegetation clearing ○ site drainage works and stormwater, including discharges ○ piling, trenching and piercing ○ vegetation under-scrubbing and mowing

Section Reference 1	Recommended content
	<ul style="list-style-type: none"> • any ongoing operational or site maintenance activities such as: <ul style="list-style-type: none"> ○ asset protection zones (APZ) maintenance ○ site access ○ on-site sewage management systems ○ operational activities such as generation of noise and light ○ domestic pets preying on native fauna ○ surface water management and drainage management ○ vehicular access including bushfire accesses ○ management and maintenance of fencing ○ access to and maintenance of services <p>C. Provide a site plan that includes:</p> <ul style="list-style-type: none"> • Consideration of the detail and requirements of any other specialist reports or plans such as: <ul style="list-style-type: none"> ○ Engineering Plans ○ Landscape Plans ○ Bushfire Threat Assessments/Plans ○ Wastewater Management Plan ○ Stormwater Management Plan ○ Heritage and Archaeological searches, studies or plans ○ Flood Studies ○ Any other relevant documentation • scale, date, cadastral boundaries, Lot and DP • satellite/ aerial imagery • figure legend • all proposed clearing extents • extents of any existing clearing restrictions e.g. set aside areas or offset areas for previous development or areas subject to a form of conservation agreement • construction footprint • operational footprint • footprint of any ancillary works, facilities and access areas (including temporary and/ or permanent)

Section Reference 1	Recommended content
	<ul style="list-style-type: none">• footprint of existing and proposed supporting infrastructure including sewage treatment systems and associated piping and access, electricity, water pipes, stormwater pipes, road widening etc• asset protection zone extents• indicative stockpile or compound locations and material laydown areas• access points and roadways and extents of parking and vehicular movement areas• fencing (whether temporary or permanent)• any staging of works• future landscaping extents• any other applicable features not listed

2. Legislative context

The information provided in this section outlines the statutory requirements pertaining to the study area and is important in ensuring that all relevant statutory provisions have been identified and addressed.

Section 2 Reference	Recommended content
2.1 Legislation	<p>A. Provide a summary of the relevant legislative context of the proposal under relevant Federal, State and Local legislation, including but not limited to:</p> <ul style="list-style-type: none"> • Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) • Environmental Protection and Assessment Act 1979 • Biodiversity Conservation Act 2016 <ul style="list-style-type: none"> ○ including identification of any relevant Biodiversity Offset Scheme (BOS) thresholds • Fisheries Management Act 1994 • NSW Biosecurity Act 2015 • Water Management Act 2000 • Coastal Management Act 2016; including the applicability of any Coastal Management Programs approved under this Act • State Environmental Planning Policy (Biodiversity and Conservation) 2021 <ul style="list-style-type: none"> ○ To satisfy Chapters 3 & 4 of this SEPP (Koala Habitat) development must comply with Council's Comprehensive Koala Plan of Management (CKPoM) (2000) • State Environmental Planning Policy (Resilience and Hazards) 2021 • Port Stephens Comprehensive Koala Plan of Management (CKPoM) (2000): including assessments in compliance with Appendix 4 and Appendix 6 of the CKPoM • Port Stephens Local Environmental Plan; including: <ul style="list-style-type: none"> ○ 7.1 Acid Sulphate Soils ○ 7.9 Wetlands ○ 7.10 Williams River Catchment <p><i>NOTE: this is not an exhaustive list of all applicable planning instruments that may apply. Any additional legislative requirements including approvals, consents and licences must also be identified and complied with.</i></p>

Section 2 Reference	Recommended content
2.2 Previous approvals or consents	B. Provide a summary of any previous relevant consents or approvals on the site , including modifications and a brief summary of their scope of works.

3. Methods

The information provided in this section is to outline the desktop and field survey methods used to inform the Ecological Impact Assessment. The choice of field survey methods and extent of the survey should be adequately justified to enable Council to make a determination on any survey constraints and the potential implications for any survey results and impact assessment conclusions.

Section 3 Reference	Recommended content
3.1 Personnel	A. Provide a table summarising the contributors to the study, their qualifications and Project roles
3.2 Database searches and literature review	<p>B. Undertake a desktop review of the known ecological features and context previously identified or mapped on the site and/or within the locality (minimum 10km radius). Ecological features and context includes (and is not limited to): threatened fauna and flora, endangered populations, threatened ecological communities, habitat for migratory species and critical habitat.</p> <p>C. List the database sources, search dates and any relevant parameters (10km buffer). As a minimum, the following sources must be considered:</p> <ul style="list-style-type: none"> • Port Stephens Councils Comprehensive Koala Plan of Management (CKPoM) Koala Habitat Map: https://www.portstephens.nsw.gov.au/environment/environmental-plans-and-strategies/comprehensive-koala-plan-of-management • NSW Biodiversity Values Map (DEECCW): https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/about-the-biodiversity-offsets-scheme/when-does-bos-apply/biodiversity-values-map/accessing-the-biodiversity-values-map-data • Office of Environment and Heritage (OEH) BioNet Atlas (BioNet) https://atlas.bionet.nsw.gov.au/UI_Modules/ATLAS_/AtlasSearch.aspx • The EPBC Act Protected Matters Search Tool (PMST) https://pmst.awe.gov.au/#/map?lng=131.52832031250003&lat=-28.671310915880834&zoom=5&baseLayers=Imagery,ImageryLabels • NSW BioNet Vegetation Classification System or a suitable regional vegetation mapping alternative https://www.environment.nsw.gov.au/research/VegetationInformationSystem.htm

Section 3 Reference	Recommended content
	<ul style="list-style-type: none"> • NSW Threatened Species Profiles https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet/about-bionet-atlas/threatened-biodiversity-profiles • Department of the Environment and Energy (DotEE) Species Profile and Threats Database (SPRAT) https://environment.gov.au/cgi-bin/sprat/public/sprat.pl • Fisheries NSW Spatial Data Portal https://webmap.industry.nsw.gov.au/Html5Viewer/index.html?viewer=Fisheries_Data_Portal • Any previous ecological surveys or ecological assessments undertaken either on site, or within the locality publically available.
3.3 Flora and Fauna Survey	<p>A. Describe the methods used to undertake flora and fauna surveys. Including information such as survey dates, weather conditions prior to (where relevant) and during the surveys, size of plots/transects, number of plots/transects, locations of plots/transects and floristic data recorded during the survey in relation to:</p> <ul style="list-style-type: none"> • Plant Community Type (PCT) validation – the extent and condition of native vegetation including mapped and assessment against the most appropriate PCTs as defined in the NSW Vegetation Information System. • Habitat Assessments for threatened flora and fauna to inform likelihood of occurrence considering site characteristics such as: soil type, site hydrology, the structure and floristics of the canopy, understorey and ground vegetation, the structure and composition of the litter layer, and other habitat attributes important for feeding, roosting and breeding including significant habitat features such as hollow bearing trees, caves, tunnels and wetlands. • Targeted surveys including: demonstration of compliance with any relevant statutory survey guidelines, identification of species targeted, targeted survey dates, personnel involved and survey methods used (including provision of the targeted survey tracks (GPS tracks) and locations of any fauna trapping efforts on a survey effort figure), any information accessed on optimal survey periods, use of flowering reference sites and any modifications to the prescribed methods. A template for targeted survey effort is provided below. • Any other incidental observations, or evidence of flora or fauna were recorded. <p>B. Provide a survey effort map identifying the locations and extent of all survey effort undertaken on the site (this can be combined or split for flora and fauna survey effort).</p>

Section 3 Reference	Recommended content									
	<p>NOTE: Field survey effort undertaken within the 5 year period prior to the report submission date to Council is considered to be valid and is able to be attributed to the total survey effort. All survey effort undertaken outside of this period is unable to be attributed to the minimum survey effort, when meeting statutory minimum survey effort requirements.</p> <p>Example Targeted survey effort summary table:</p>									
	Targeted species	Survey Date	Survey Time	Weather conditions	Personnel	Method	Minimum survey effort required/ Method reference	Effort per site	Replication	Total survey effort
Mahony's Toadlet	20 January 2024	9-11pm	21°C 21mm rainfall (25mm rainfall received in 7 days prior to survey)	Joe Blogs Jemima Smith	Spotlighting & call playback	Aural visual surveys during Oct-March for 480mins per 500m transect, over 4 separate nights = total effort of 240mins- as per the NSW Survey Guide for Threatened Frogs	2 persons x 30mins on a 500m transect	4 x nights	4 person hours (240mins)	
<i>Diuris arenaria</i>	12 September 2024	12pm	26°C 0mm rainfall	Joe Blogs Jemima Smith	5m Parallel Transects during flowering period	Flowering period confirmed with Council/OEH officer and/or reference population checked in flower at time of survey.	Systematic transects at 5m spacing in PCTs XXXX (identified	2 x persons 1 day	16 person hours	

Section 3 Reference	Recommended content									
							Parallel survey transects during flowering period as per the NSW Surveying threatened plants and their habitats (DPIE, 2020)	as suitable habitat)		
3.4 Likelihood of occurrence	<p>A. Prepare a likelihood of occurrence table produced from the list of threatened and migratory species, populations and communities previously recorded or predicted to occur within 10 km of the site by collating the species lists from the desktop assessment and database searches.</p> <ul style="list-style-type: none"> • Identify the habitat requirements of the entities, outcomes of any site based habitat assessments, the state of habitat connectivity, and any records of historical and recent presence to assign each species, population and/or community to a category based on the likelihood of their occurrence in the subject site using the following criteria and templates below: <ul style="list-style-type: none"> ○ <u>LOW</u> - Species which are not recorded during field surveys and that fit one or more of the following criteria: <ol style="list-style-type: none"> i. have not been recorded previously in the study area and surrounds and for which the study area is beyond the current distribution range ii. rely on specific habitat types or resources that are not present in the study area iii. are considered locally extinct iv. are a non-cryptic perennial flora species that were specifically targeted by surveys and not recorded ○ <u>MODERATE</u> - Species which were not recorded during the field surveys and that fit one or more of the following criteria: <ol style="list-style-type: none"> i. have infrequently been recorded previously in the study area and surrounds ii. use habitat types or resources that are present in the study area, although generally in a poor or modified condition 									

Section 3 Reference	Recommended content																				
	<p>iii. are unlikely to maintain sedentary populations, however, may seasonally use resources within the study area opportunistically during variable seasons or migration</p> <p>iv. are cryptic flowering flora species that were not seasonally targeted by surveys and that have not been recorded</p> <ul style="list-style-type: none"> ○ HIGH - Species which were not recorded during the field surveys and that fit one or more of the following criteria: <ul style="list-style-type: none"> i. have frequently been recorded previously in the study area and surrounds ii. use habitat types or resources that are present in the study area, that are abundant and/or in good condition within the study area iii. are known or likely to maintain resident populations surrounding the study area iv. are known or likely to visit the site during regular seasonal movements or migration ○ RECORDED/KNOWN - Any entities recorded on site during current or previous field surveys or studies. <p>Example likelihood of occurrence table:</p> <table border="1" data-bbox="470 794 2038 1184"> <thead> <tr> <th>Species name</th> <th>Common name</th> <th>Source</th> <th>Number of records in locality</th> <th>BC Act status</th> <th>EPBC Act status</th> <th>Habitat description</th> <th>Extent of impacts</th> <th>Likelihood of occurrence</th> <th>Likelihood of impact (test of significance outcome)</th> </tr> </thead> <tbody> <tr> <td>e.g. <i>Pterostylis chaetophora</i></td> <td>Rusty Greenhood</td> <td>BioNet</td> <td>15</td> <td>V</td> <td>N/A</td> <td>Seasonally moist, dry sclerophyll forest with a grass and shrub understorey. (OEH 2017e)</td> <td>0.2 ha of PCT XXX</td> <td>Moderate</td> <td>Low</td> </tr> </tbody> </table> <p>NOTE: Where the likelihood of occurrence assessment assigns an entity of 'moderate' or higher, likelihood, further assessment, including targeted survey, is expected to be undertaken. Whether targeted survey should be undertaken is dependent on the complexity of the proposal including area, duration and severity of impact. Where targeted survey has not been conducted and potential habitat exists on site the species must be</p>	Species name	Common name	Source	Number of records in locality	BC Act status	EPBC Act status	Habitat description	Extent of impacts	Likelihood of occurrence	Likelihood of impact (test of significance outcome)	e.g. <i>Pterostylis chaetophora</i>	Rusty Greenhood	BioNet	15	V	N/A	Seasonally moist, dry sclerophyll forest with a grass and shrub understorey. (OEH 2017e)	0.2 ha of PCT XXX	Moderate	Low
Species name	Common name	Source	Number of records in locality	BC Act status	EPBC Act status	Habitat description	Extent of impacts	Likelihood of occurrence	Likelihood of impact (test of significance outcome)												
e.g. <i>Pterostylis chaetophora</i>	Rusty Greenhood	BioNet	15	V	N/A	Seasonally moist, dry sclerophyll forest with a grass and shrub understorey. (OEH 2017e)	0.2 ha of PCT XXX	Moderate	Low												

Section 3 Reference	Recommended content
	<i>assumed as present on site. For some species such as orchids targeted survey is recommended if the proposal cannot be sited or designed to avoid potential impacts.</i>
3.5 Survey limitations	A. Identify any survey limitations including: survey timing, weather conditions, variations from relevant guidelines or site conditions such as evidence of slashing, mowing or clearing or previous bushfire etc.

4. Existing environment

The information provided in this section describes the existing environment and presents the results of the field survey. The existing environment should be adequately described to enable Council to gain a detailed understanding of the study area to enable a determination on whether survey methods and impact assessment conclusions are appropriate.

Section 4 Reference	Recommended content																		
4.1 Database & literature review	<p>A. Provide a summary of the results of the desktop assessment</p> <p>B. Identify the entities (threatened and migratory species, ecological communities and endangered populations identified for further assessment (moderate or higher likelihood of occurrence).</p>																		
4.2 Flora	<p>A. Identify and map any significant flora species or habitats on site (particularly mapping the location and extent of any threatened flora species) and refer to a full flora species list which is to be provided as an appendix.</p> <p>B. Identify and map the extent of all PCTs on site, including photos of each PCT and provision of an assignment justification for each PCT. A recommended PCT description template is provided below:</p> <table border="1"> <thead> <tr> <th>Characteristic</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PCT Name</td> <td>Insert PCT Name <i>for example: Spotted Gum – Broad leaved Mahogany – Red Ironbark shrubby open forest</i></td> </tr> <tr> <td>PCT ID</td> <td>Insert PCT ID <i>for example: 1590</i></td> </tr> <tr> <td>Photos</td> <td>Insert representative photo(s) of PCT in study area</td> </tr> <tr> <td>Condition</td> <td>Identify whether the vegetation associated with the PCT is in good/ moderate/ poor condition and provide a text based description that provides more context</td> </tr> <tr> <td>Area within subject site</td> <td>Specify area in hectares or square metres (whichever relevant)</td> </tr> <tr> <td>Vegetation formation</td> <td>Specify the vegetation formation according to the NSW BioNet Vegetation Classification User Manual (NSW Department of Environment and Climate Change, August 2017)</td> </tr> <tr> <td>Vegetation class</td> <td>Specify the vegetation class according to the NSW BioNet Vegetation Classification User Manual (NSW Department of Environment and Climate Change, August 2017)</td> </tr> <tr> <td>Conservation status</td> <td>Identify the conservation status of the PCT under the BC Act 2016 and EPBC Act 1999 and identify the applicable threatened ecological community.</td> </tr> </tbody> </table>	Characteristic	Description	PCT Name	Insert PCT Name <i>for example: Spotted Gum – Broad leaved Mahogany – Red Ironbark shrubby open forest</i>	PCT ID	Insert PCT ID <i>for example: 1590</i>	Photos	Insert representative photo(s) of PCT in study area	Condition	Identify whether the vegetation associated with the PCT is in good/ moderate/ poor condition and provide a text based description that provides more context	Area within subject site	Specify area in hectares or square metres (whichever relevant)	Vegetation formation	Specify the vegetation formation according to the NSW BioNet Vegetation Classification User Manual (NSW Department of Environment and Climate Change, August 2017)	Vegetation class	Specify the vegetation class according to the NSW BioNet Vegetation Classification User Manual (NSW Department of Environment and Climate Change, August 2017)	Conservation status	Identify the conservation status of the PCT under the BC Act 2016 and EPBC Act 1999 and identify the applicable threatened ecological community.
Characteristic	Description																		
PCT Name	Insert PCT Name <i>for example: Spotted Gum – Broad leaved Mahogany – Red Ironbark shrubby open forest</i>																		
PCT ID	Insert PCT ID <i>for example: 1590</i>																		
Photos	Insert representative photo(s) of PCT in study area																		
Condition	Identify whether the vegetation associated with the PCT is in good/ moderate/ poor condition and provide a text based description that provides more context																		
Area within subject site	Specify area in hectares or square metres (whichever relevant)																		
Vegetation formation	Specify the vegetation formation according to the NSW BioNet Vegetation Classification User Manual (NSW Department of Environment and Climate Change, August 2017)																		
Vegetation class	Specify the vegetation class according to the NSW BioNet Vegetation Classification User Manual (NSW Department of Environment and Climate Change, August 2017)																		
Conservation status	Identify the conservation status of the PCT under the BC Act 2016 and EPBC Act 1999 and identify the applicable threatened ecological community.																		

Section 4 Reference	Recommended content		
	Justification for PCT selection	Justification required	Justification
		Vegetation formation/ class selected	Provide justification for the vegetation formation/ class selected. For example the vegetation most closely resembles a Dry Sclerophyll Forest within the shrub/grass sub-formation due to the presence of a semi-continuous cover of grasses and a sparse shrub layer.
		Other possible PCT's considered	Provide a list of other possible PCTs that were considered during the identification process. For example other Spotted Gum- Ironbark dominated by Dry Sclerophyll Forest within the shrub/grass sub-formation which occur in the Hunter Interim Biogeographic Regionalisation of Australia (IBRA) sub-region were considered with a total of 7 PCTs considered including PCTs 1600, 1601, 1602, 1589, 1590, 1592 and 1593.
		Reasons for exclusion of PCTs	Provide reasoning for the exclusion of PCTs. For example PCT 1600 and 1601 were excluded due to the lineage of these PCT, which is derived from the Central Hunter Mapping Project and Greater Hunter Vegetation Mapping Project and is more representative of vegetation community types occurring further to the north-west of the Study Area. Additionally, PCT 1602 was excluded due to the dominance of <i>E. crebra</i> within this PCT which is more representative of Central Hunter Spotted Gum Ironbark Forest. PCT 1593 was excluded as this PCT is described as being dominated by <i>E. fibrosa</i> . PCT 1592 was excluded due to the presence of <i>E. punctata</i> in this PCT, which is lacking from the study area.
		Selection of chosen PCT	Provide justification for the selection of the chosen PCT. For example PCT 1590 and 1589 were deemed to be the most floristically aligned PCTs to the vegetation within the study area. These two PCTs have very similar vegetation descriptions and occur in similar positions in the landscape. The vegetation has floristics similar to both PCTs, however PCT 1590 was determined to be the more accurate fit for the vegetation on site due to the presence of <i>E. fibrosa</i> in one area of the site and presence of <i>Cheilanthes sieberi</i> and <i>Lepidosperma laterale</i> and lack of some key diagnostic species from PCT 1589.
	<p>C. Identify and map the extent of any weeds or biosecurity matters identified on site.</p> <p>NOTE: where cryptic flora species such as orchids (including <i>Diuris praecox</i> and <i>Diuris arenaria</i>) are identified as a moderate of higher likelihood of occurrence on site targeted surveys will be required.</p>		
4.3 Fauna	<p>A. Identify and map any significant fauna species or habitats identified on site or during the desktop assessment (particularly mapping the location and extent of any threatened fauna species or habitats) and refer to a full fauna species list which is to be provided as an appendix. This must include:</p> <ul style="list-style-type: none"> • location of all hollow bearing trees on site (including a hollowing bearing tree schedule detailing the hollow number, hollow size and tree species of all hollow bearing trees and their hollows) • location of all threatened species records on site, and identification or mapping of their habitat extents on site (can be provided as PCT alignments) 		

Section 4 Reference	Recommended content
	<ul style="list-style-type: none"> • location and description of all major habitat types or evidence of fauna habitat usage on site (including photos) such as waterbodies, caves/rocky overhangs and tunnels/culverts, nest trees or dens, diggings/scratching's and scats etc. • Identify any pest fauna species detected or likely to occur within the study area. <p>B. Provide a Koala habitat assessment (including habitat mapping) prepared in accordance with Appendix 6 of the Port Stephens CKPoM – refer to section B2.B of the DCP for more detail.</p> <p>NOTE: <i>where sensitive fauna species are identified on site (such as a Powerful Owl nest tree) targeted surveys will be required to inform the assessment.</i></p>

5. Impact assessment

The information provided in this section details the impact assessment conducted. The detail provided in the impact assessment should adequately justify any conclusions and enable Council to make a determination that supports those conclusions.

Section 5 Reference	Recommended content
5.1 Impact Footprint	<p>A. Clearly identify, quantify and describe the nature and extent of the potential impacts to biodiversity.</p> <p>The impact assessment must identify all potential impacts of the proposed development, including cumulative impacts, distinguish between direct and indirect impacts and consider impacts of both construction, operation and maintenance activities including:</p> <ul style="list-style-type: none"> • location, type and amount of native vegetation clearing in square metres or hectares • amount and type of koala habitat impacted, specifically the location, size, species and number of Preferred koala feed trees to be retained and/or removed • the habitat of threatened species or ecological communities within the study area • habitat connectivity within a study area for threatened species that may help facilitate the movement of those species across their range • the movement of threatened species that maintains their lifecycle • water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities • hollow bearing trees and all trees for removal and retention • extent of impacts to threatened species and known/potential habitat onsite that will or have the potential to be impacted • impacts on habitat connectivity • edge effects • the creation of any barriers to fish passage • the potential impacts from sediment and nutrient runoff during construction • alteration of hydrological regime on downstream wetlands

Section 5 Reference	Recommended content
	<ul style="list-style-type: none"> • the potential impacts of noise and vibration for an extended period during construction which may disrupt the roosting or breeding of or have other impacts on threatened fauna species • Cumulative impacts and the potential effect of the proposal in combination with existing land uses and other developments, activities or actions • any other relevant key impacts <p>B. Provide a development footprint impact plan (including direct and indirect impacts) for all construction, operation and maintenance stages which clearly identifies the full extent of on ground impacts on biodiversity</p> <p>C. Provide a Biodiversity Offset Scheme threshold assessment test which clearly assesses the proposal against the thresholds listed under 7.1 of the Biodiversity Conservation Regulation 2017.</p> <p>NOTE: <i>depending on the scale of the proposed development, multiple maps may be required to be provided to adequately detail the extent of impacts to threatened entities.</i></p>
5.2 Impact Assessment	<p>A. Prepare an assessment of significance for all relevant threatened entities listed under the BC Act, Fisheries Management Act or EPBC Act which were either: confirmed present on site, or with a moderate or higher likelihood of occurrence which did not have a complying targeted survey completed, or have been assumed present on site. Provide a summary of the assessments of significance results, and include a copy of the assessments as an Appendix.</p> <p>B. Provide a Koala performance criteria assessment prepared in accordance with Appendix 4 of the Port Stephens CKPoM – refer to section B2.B of the DCP for more detail. Clearly qualify the numbers, size, location and species of Koala feed trees impacted and consider the full scope of potential impacts to the Koala.</p> <p>C. Discuss the proposal potential for impacts to entities protected under any other relevant legislation.</p> <p>NOTE: <i>all assessments of significance (also referred to as tests of significance) must be prepared in accordance with relevant legislative requirements and guidelines: EPBC Act Significant Impact Guidelines (DotE 2013) & Biodiversity Conservation Act 2016 Threatened Species Test of Significance Guidelines (OEH, 2018). Where a test of significance identifies that a significant impact is likely, entry into the Biodiversity Offset Scheme will be triggered and preparation of a Biodiversity Development Assessment Report will be required.</i></p>

Section 5 Reference	Recommended content
5.3 Key threatening processes	<p>Identify the key threatening processes for which the proposal is likely to contribute to, or are likely to be enhanced as a result of the proposed works.</p> <p>Refer to links below for the current key threatening processes:</p> <ul style="list-style-type: none"><li data-bbox="499 427 1581 456">• https://www.environment.nsw.gov.au/threatenedSpeciesApp/threats.aspx<li data-bbox="499 464 1581 493">• http://www.environment.gov.au/cgi-bin/sprat/public/publicgetkeythreats.pl

6. Mitigation measures and key recommendations

The information provided in this section details the mitigation measures and key recommendations to reduce potential impacts to biodiversity within the study area. The detail provided should be sufficient to enable Council to assess whether the mitigation measures and key recommendations are adequate to help reduce the potential impacts of the proposal.

Section 6 Reference	Recommended content
6.1. Impact minimisation	<p>A. Clearly identify the criteria used to identify areas of high biodiversity value on the site and how these areas have been considered during project design and either avoided or minimised to reduce impacts, demonstrating:</p> <ul style="list-style-type: none"> • how the proposed development has been designed and sited in consideration of the constraints on site to avoid and minimise potential impacts to threatened biodiversity and associated habitat; • where impacts to biodiversity values are unavoidable impacts have been minimised; • the iterative process between the design process and impact assessment refined the design through avoidance, and where impacts are unavoidable these have been minimised; and • clearly identify and justify why impacts could not be avoided or minimised where impacts to biodiversity values occur <p>NOTE: <i>Consideration of avoidance and minimisation of impacts at an early planning stage can help reduce impacts on biodiversity values and potential development costs and timing. For sites with significant biodiversity values, Council recommends making contact with Council’s Environmental Planning Team for advice: (environmentalplanningteam@portstephens.nsw.gov.au)</i></p>
6.2 Mitigation measures	<p>A. Describe the mitigation measures proposed to reduce direct and indirect impacts that could not be avoided. A number of suitable measures are provided in Council’s Biodiversity Technical Specification. Mitigation measures should be:</p> <ul style="list-style-type: none"> • fully detailed describing the method and timing, methods should use accepted protocols/ standards where available; • specific to the nature of the proposal and aspects of the threatened biodiversity being affected; • developed to respond to the threats/ impacts likely to be caused or exacerbated by the proposal to ensure the development of appropriate mitigation measures;

Section 6 Reference	Recommended content
	<ul style="list-style-type: none">• consider the range of direct and indirect impacts that the proposal is likely to have; and• identify any relevant management plans either existing or to be prepared, and• comply with and refer to any relevant industry-best specifications (including Council's Biodiversity Technical Specification)

7. Conclusion

The information provided in this section provides a brief summary of Ecological Impact Assessment outcomes, details any key findings and identifies any major mitigation measures to reduce potential impacts to biodiversity. The detail provided should be sufficient to provide a summary of the results of the Ecological Impact Assessment to Council for assessment.

Section 7 Reference	Recommended content
7.1. Conclusion	<p>A. Summarise the key findings and outcomes of the assessment without introducing any new information including:</p> <ul style="list-style-type: none">• The key ecological features of the study area, including threatened species, populations and communities.• The main impacts of the proposed activities and their relevance to important ecological values.• The results of any significance assessments and the implications for the project.• Any key mitigation measures or outstanding actions.

REFERENCES

The following references list includes both references included in the above document or are considered useful in the preparation of an EIA:

Department of the Environment (DotE), 2013. *Matters of National Environmental Significance - Significant impact guidelines 1.1*. Australian Government Department of the Environment, Canberra

Department of the Environment and Energy (DotEE), (add date accessed). *Protected Matters Search Tool*. Retrieved from Australian Government - Department of Environment and Energy: <http://www.environment.gov.au/webgis-framework/apps/pmst/pmst-coordinate.jsf> Australian Government, Department of the Environment and Energy, Canberra

Department of the Environment and Energy (DotEE), (add date accessed). *Species Profile and Threats Database*. <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl> Australian Government, Department of the Environment and Energy, Canberra

NSW Department of Primary Industries (DPI) Fisheries (add date accessed). Spatial Data Portal
https://webmap.industry.nsw.gov.au/Html5Viewer/index.html?viewer=Fisheries_Data_Portal New South Wales Department of Primary Industries, Nelson Bay

NSW Department of Planning, Industry and Environment (DPIE) 2020, Surveying Threatened Plants and their Habitats: <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/surveying-threatened-plants-and-habitats-nsw-survey-guide-biodiversity-assessment-method-200146.pdf>

NSW Department of Environment and Conservation (DEC) 2004, *Working Draft Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities*
<http://www.environment.nsw.gov.au/resources/nature/TBSAGuidelinesDraft.pdf>

NSW Department of Planning and Environment Biodiversity Values Map.
<https://www.environment.nsw.gov.au/biodiversity/biodiversity-values-map.htm>

NSW Office of Environment and Heritage (OEH), 2016. Field Survey Methods and NSW Guide to Surveying Threatened Plants
<http://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/about-threatened-species/surveys-and-assessments/field-survey-methods>

NSW Office of Environment and Heritage (OEH), 2018. *Threatened species test of significance guidelines*. New South Wales Office of Environment and Heritage, Sydney

Office of Environment and Heritage (OEH), (add date accessed). *BioNet Atlas of NSW Wildlife Database of flora and fauna records* (formerly known as the NSW Wildlife Atlas and Threatened Species Profile Database). www.BioNet.nsw.gov.au. New South Wales Office of Environment and Heritage, Sydney

Office of Environment and Heritage (OEH), (add date accessed). *NSW Threatened Species Profiles*. <http://www.environment.nsw.gov.au/threatenedspeciesapp/> New South Wales Office of Environment and Heritage, Sydney

Port Stephens Council (2002). Port Stephens Council Comprehensive Koala Plan of Management (CKPoM) – June 2002. Prepared by Port Stephens Council with the Australian Koala Foundation



116 Adelaide Street | PO Box 42
Raymond Terrace NSW 2324
council@portstephens.nsw.gov.au
02 4988 0255

PORTSTEPHENS.NSW.GOV.AU
A row of four small, square social media icons: LinkedIn, Facebook, Twitter, and Instagram.