

Biodiversity Certification Assessment Report

Planning Proposal to Rezone Land within the South West Growth Area, Catherine Field Precinct, Catherine Field NSW.



Prepared for: Springfield Rd Pty Ltd

C/- Urbanco

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1.0 Introduction

Anderson Environment & Planning was commissioned by Springfield Rd Pty Ltd (the client) to undertake a site assessment to confirm the extent and condition of vegetation on site as is presented within the studies that led to the biodiversity certification of the Subject Site land; and to provide ecological advice to inform a Planning Proposal to Rezone Land within the South West Growth Area, Catherine Field Precinct, Catherine Field NSW, refer **Figure 1**.

For the purposes of referencing, this document should be referred to as:

Anderson Environment & Planning (2022).; Biodiversity Certification Assessment Report; Planning Proposal to Rezone Land within the South West Growth Area, Catherine Field Precinct, Catherine Field NSW. Unpublished report for Springfield Rd Pty Ltd. March 2022.

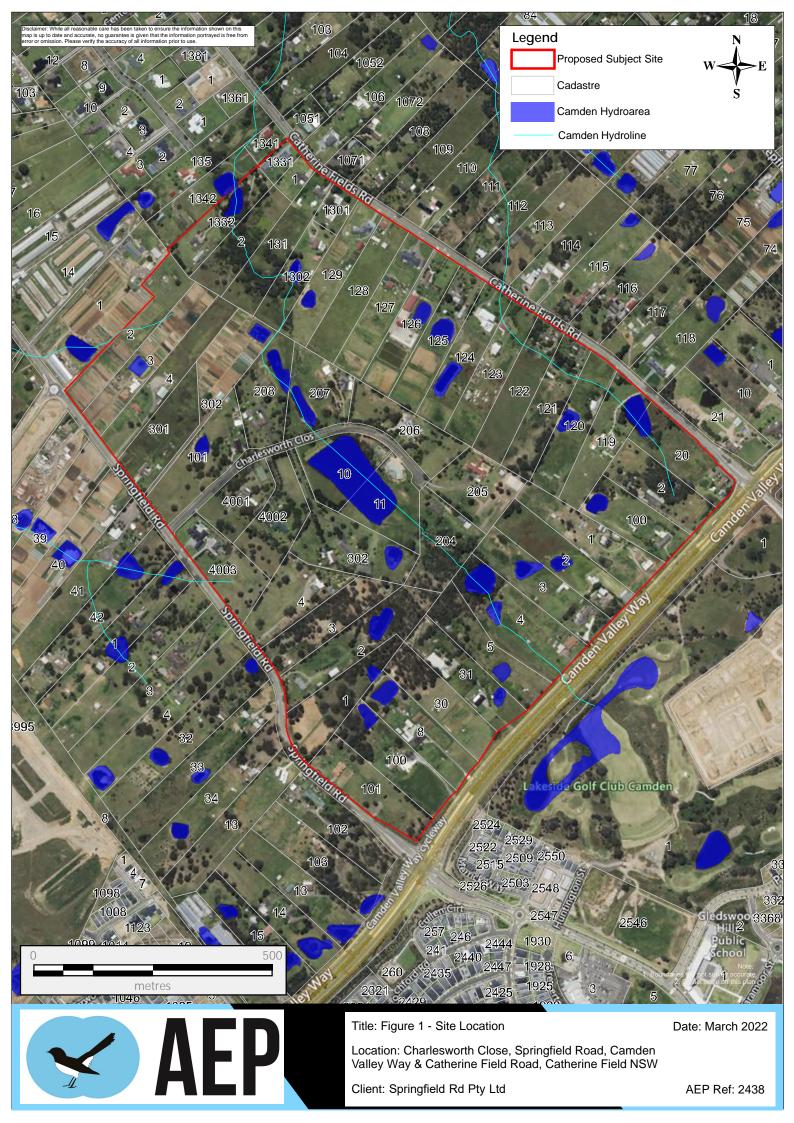
2.0 Site Particulars

Table 1 - Site Details

Detail	Comments
Client	Springfield Rd Pty Ltd
Address	Charlesworth Close, Springfield Road, Camden Valley Way & Catherine Field Road in Catherine Field NSW
Precinct	'Catherine Field Precinct' within the South West Growth Area
Lot Title(s) Assessed During Field Assessment	Springfield Road Lots 3 – 4 DP215520, Charlesworth Close Lot 302 DP716446, Lots 10 – 11, DP618175, Lots 204 – 206 DP249147 and lots contained within Precinct 1, identified within the land adjacent to Springfield Road, Camden Valley Way and Catherine Fields Rd, Catherine Field, NSW.
	Numerous other lots are included in the rezoning application (as identified within the Subject Site), however, they were not assessed as part of the field survey due to access constraints.
Subject Site	The Subject Site covers approximately 104ha and includes the entirety of the lots within the Subject Site boundary (refer Figure 1).
LGA	Camden
Zoning	As per Camden LEP 2010, the Subject Site is predominately zoned RU4 – Primary Production Small Lots, with the exception of lots in the northern part zoned R5 – Large Lot Residential.
Current Land Use	The Subject Site comprises rural dwellings consisting of cattle paddocks, farming dams and equipment, industrial waste and croplands (refer Figure 2).
Surrounding Land Use	The Subject Site is bounded Camden Valley Way to the east, Springfield Road to the south, Catherine Fields Road to the north and lots zoned R5 and RU4.



Detail	Comments
Proposed Development	The Catherine Field Planning Proposal is a Proponent-led proposal that seeks to rezone approximately 104 hectares of land within the Catherine Field Precinct to enable urban development for new housing, open space and recreation, riparian protection, major roads and stormwater management. The site is located wholly within the Camden Local Government Area and is approximately 42 kilometres south-west of the Sydney CBD.
	The draft Indicative Structure Plan delivers approximately 2080 dwellings and a population of around 5,800 people. There will be a range of housing types at varying densities throughout the site. The site is identified for low and medium density residential development with single dwellings on lots ranging in size up from 250 square metres and averaging around 350 square metres and attached and semi-attached housing, typical of recently developed urban growth areas in other parts of Sydney. The Proposal will provide a range of social infrastructure, including open space, recreation and community facilities for the future community, and deliver road and utilities infrastructure to service the broader South West Growth Area.





3.0 The Subject Site

The site comprises approximately 104ha of multiple fragmented landholdings that are currently zoned under the *Camden Local Environment Plan 2010* and forms part of the Catherine Field Precinct in the South West Growth Area. The site is located within lands adjacent to Springfield Road that forms the southwest boundary, Catherine Field Road that forms the north east boundary and Camden Valley Way that forms the south east boundary. The north western boundary will comprise the future Rickard Road extension.

The Subject Site is represented mainly by exotic paddocks and remnant patches of native vegetation comprising Grey Box Forest Red Gum Grassy Woodland. The native vegetation consists of scattered trees that occur more frequently in the northern portion of the Subject lands. There are more intact patches of this native vegetation in the south eastern portion of the site.

There are several large farm dams that occur throughout the Subject Site that are connected by overland water flow. There is one (1) defined stream identified within the Subject Site.

4.0 Planning Proposal

The Catherine Field Planning Proposal is a Proponent-led proposal that seeks to rezone approximately 104 hectares of land within the Catherine Field Precinct to enable urban development for new housing, open space and recreation, riparian protection, major roads and stormwater management. The site is located wholly within the Camden Local Government Area and is approximately 42 kilometres southwest of the Sydney CBD.

The draft Indicative Structure Plan delivers approximately 2080 dwellings and a population of around 5,800 people. There will be a range of housing types at varying densities throughout the site. The site is identified for low and medium density residential development with single dwellings on lots ranging in size up from 250 square metres and averaging around 350 square metres and attached and semi-attached housing, typical of recently developed urban growth areas in other parts of Sydney.

The Proposal will provide a range of social infrastructure, including open space, recreation and community facilities for the future community, and deliver road and utilities infrastructure to service the broader South West Growth Area. The Planning Proposal will zone the subject land under the Growth Centres SEPP and the zoning mapping will be informed by the Indicative Structure Plan.

5.0 Ecological Characteristics

5.1 Information Sources

Information and spatial data provided within this report has been compiled from various sources including:

- Aerial Photograph Interpretation (API) of the site and surrounding locality;
- Regional vegetation mapping prepared by Tozer et al. (2010) for native vegetation of southeast NSW; and
- Collective knowledge gained from previous ecological survey and assessment in the area over the past 25 years.



5.2 Desktop Assessment

Desktop assessment was undertaken to determine ecological values within the Subject Site assessing regional vegetation and environmental legislative controls which apply within the Subject Site.

Regional vegetation mapping executed under the Remnant Vegetation of the *Tozer et al* (2010), Native vegetation of southeast NSW, NSW Department of Environment & Climate Change, Scientific Services Division, was utilised to identify potential vegetation communities occurring within the Subject Site.

The regional vegetation mapping indicated that the Subject Site mostly comprised cleared land with two vegetation communities on site; Cumberland Shale Hills Woodland and Cumberland Shale Plains Woodland (refer **Figure 2**).

A description of the potential vegetation communities and associated Threatened Ecological Communities (TECs) to occur on site are presented below:

- Cumberland Shale Plains Woodland;
 - Equivalent to PCT 849 Grey Box Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion; and
 - is associated with State and Commonwealth Listed Critically Endangered Ecological Community (CEEC) Cumberland Plain Woodland in the Sydney Basin Bioregion.
- Cumberland Shale Hills Woodland:
 - Equivalent to PCT 850 Grey Box Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion; and
 - o is associated with State and Commonwealth Listed CEEC Cumberland Plain Woodland in the Sydney Basin Bioregion.

5.3 Field Survey

Field surveys were completed on 9 and 10 September 2021, within Lots 3-4 DP215520, Charlesworth Close Lot 302 DP716446, Lots 10-11, DP618175, Lots 204-206 DP249147 to assess ecological characteristics and vegetation communities within the Lots. Additional surveys from Springfield Road, Camden Valley Way and Catherine Fields Road were also undertaken to assess the broader site where access to lots within the broader Subject Site were not available. Additionally, where access was not permitted, general observations of the adjoining lots was utilised to determine the ecological characteristics of that lot.

At the sites that were inspected the following data was collected to ground-truth the data collected at the desktop level.

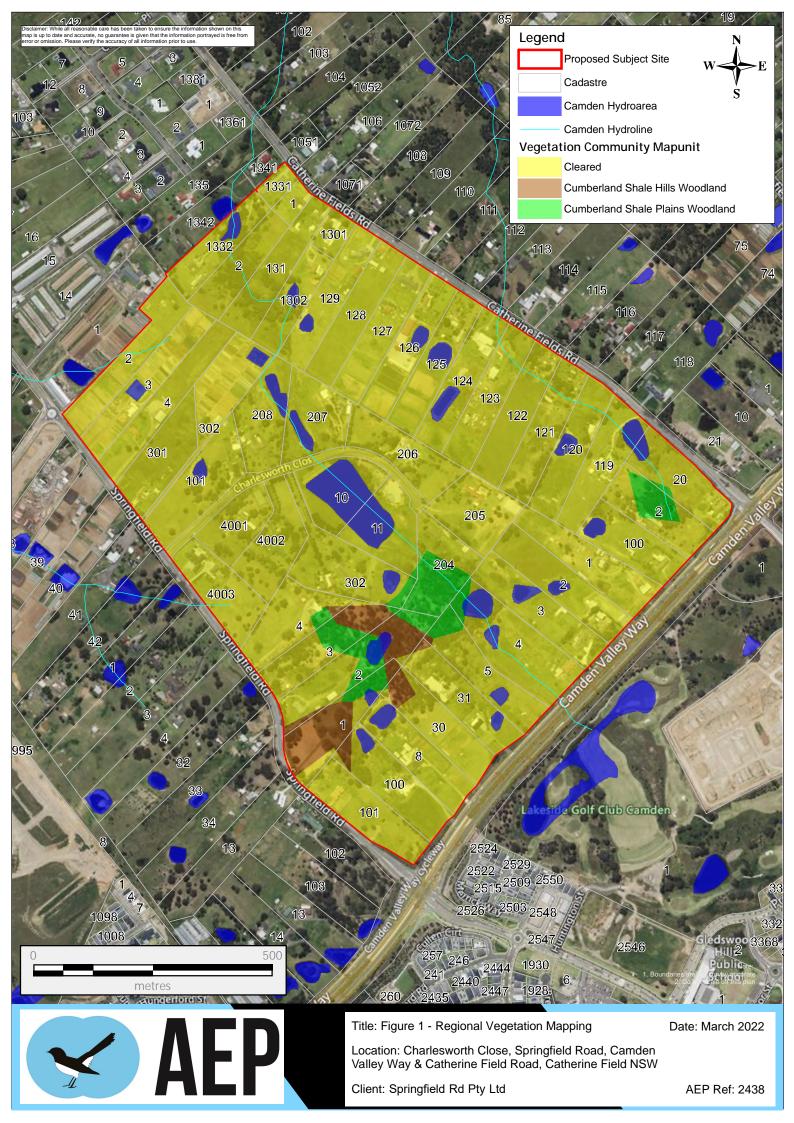
Floristic surveys and landscape assessment was used to determine vegetation community types on site and no detailed vegetation assessments in the form of NSW Biodiversity Assessment Plots were utilised to determine plant community type. Survey results identified that majority of the site comprised non-remnant / cleared land and was primarily used for farming practices. However, native stands of vegetation were identified on site.

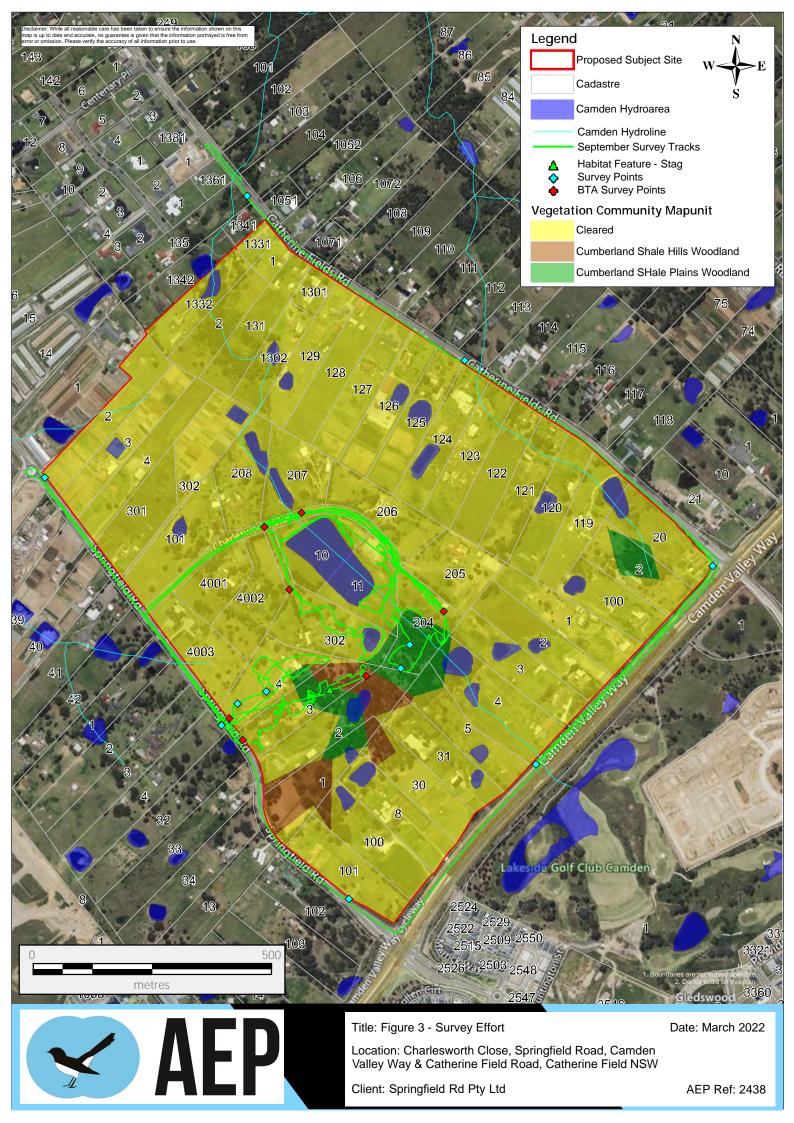
The native stands of vegetation are predominantly scattered and canopy only. One patch of native vegetation located in the south eastern corner of the site was more intact and connected. However, as per the rest of the native vegetation on site this area was highly disturbed, canopy only and widely fragmented from any other broader patches of vegetation.

Assessment of the native vegetation assemblage identified key diagnostic species on site that were commensurate with State and Commonwealth listed threatened ecological community (TEC) Cumberland Shale Plains Woodland. As described above, the Cumberland Shale Plains Woodland is listed as a State and Commonwealth CEEC and under the Sydney Growth Centres Program, the NSW Government has committed to delivering conservation outcomes at a State and Federal level for this CEEC.



No threatened flora or fauna were identified during field surveys; however, it was noted that there were numerous habitat features within the Subject Site including; dams and hollow bearing trees that would provide suitable foraging and roosting/breeding habitat for Southern Myotis (*Myotis macropus*) and other species such as arboreal mammals that would utilise the remnant vegetation on site (refer **Figure 3**).







6.0 Sydney Growth Centres Program

Between 2009 and 2010, under an agreement between New South Wales (NSW) State and Commonwealth Governments, a strategic assessment to identify key growth areas within the Sydney region was undertaken and prepared under the strategic assessment provisions of the *Environment and Biodiversity Conservation Act 1999* (EPBC Act).

The strategic assessment was designed to identify areas for residential living, employment opportunities and related infrastructure (biodiversity certified areas), whilst identifying key areas for conservation that could be secured throughout the broader Sydney Region as an offset mechanism (non-certified areas) for the proposed developments associated with the growth of the region (DPIE 2010a).

Preliminary studies were utilised to identify the areas within the Growth Centres suitable for biodiversity certification that could be developed and areas that were more suitable for conservation where-by the conservation areas were non-certified meaning they were to be conserved or would require assessment under NSW state threatened species assessment.

In order to be able to certify the lands, the Sydney Growth Centre Program implemented the management viability concept which assessed patch size, canopy cover and connectivity of vegetation across the landscape (DPIE 2010b). It was determined that patches of vegetation that were greater than 4ha in size, had good connectivity and had more than 10% canopy cover were likely to provide greater biodiversity value and long-term ecological viability as the larger patch size were more resilient and had greater management success in the longer term (DPIE 2021b; GCC 2007).

These areas where patches are greater than 4ha are classed as high or moderate long-term management viability areas. Patches that are less than 4ha were classed as poor and are more likely to be impacted by intense edge effects from urbanisation and are less viable over long-term management programs (DPIE 2010b).

Under this determination of patch size, connectivity and canopy cover, the vegetation present on site although collectively it comprises over 4ha, the vegetation is highly disturbed and impacted by edge effects. Additionally, the native vegetation is canopy only and predominantly fragmented. As a result, under the Growth Centres assessment the native vegetation on site has not met the criteria for conservation within the Growth Centres and as such has been subject to biodiversity certification (refer **Figure 4**). Other areas of higher conservation value have been retained within the Growth Centres to offset impacts associated with developing / clearing the native vegetation on site.





7.0 Threatened Species Conservation Act 1995

As part of the Sydney Growth Programs biodiversity certification was granted over the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centres SEPP) which allows for developments within the Growth Centres to occur without further NSW threatened species assessment (within biodiversity certified areas). However, there is still a requirement that conservation outcomes are met and the consent authorities, such as local councils, must apply the provisions and consider the objectives of the Growth Centres SEPP when they make planning decisions about land within the Growth Centres.

Biodiversity certification has been enabled under the *Threatened Species Conservation Act 1995*, (TSC Act) whereby the biodiversity certification removes the need for threatened species assessments. Under Part 7AA Division 2 Biodiversity Certification of the TSC Act.

126I Effect of Biodiversity Certification:

- (2) Development under Part 4 of the Planning Act Development on biodiversity certified land is taken, for the purposes of Part 4 of the Planning Act, to be development that is not likely to significantly affect any threatened species, population or ecological community under this Act, or its habitat.
- (3) A consent authority, when determining a development application in relation to development on biodiversity certified land under Part 4 of the Planning Act, is not required to take into consideration the likely impact of the development on biodiversity values (despite any provision of the Planning Act or any regulation or instrument made under that Act).

The North West and South West Growth Areas were two areas that were identified as part of the strategic assessment, biodiversity certified and non-certified land. The Subject Site located within Catherine Fields Precinct, falls within the South West Growth Area that is located in a biodiversity certified area. As the Subject Site occurs within biodiversity certified land and the native vegetation on site does not meet the criteria outlined in **Section 6.0** and there is no further NSW threatened species assessment required as per the conditions under the TSC Act.

8.0 The South West Growth Area

The South West Growth Area is made up of 18 precincts, with Catherine Fields comprising one (1) of these precincts. Development of the precincts is guided by the South West Structure Plan that is used to identify town centres, neighbourhood centres and industrial and conservation lands (DPIE 2010a). As per the South West Structure Plan, the Subject Site falls within Mixed Use Employment Corridors and Industrial / Employment Lands.

8.1 State Environmental Planning Policy (Sydney Region Growth Centres) 2006.

Protected Areas within the Growth Area under the Growth Centres SEPP development controls can be identified through the Vegetation Protected Areas or Riparian Protected Area maps. The areas identified within the maps have been mostly excluded from development and include areas of high biodiversity significance. These areas comprise;

- Flood prone and major creeks land such as South Creek and Kemps Creek; and
- Transitional lands that are considered to be constrained by environmental factors and thus, limit the potential for urban development.



- Removal of native vegetation within these areas requires approval and must identify that proposed impacts to native vegetation is minimised and offset to avoid net loss, whilst retained native vegetation in the area is protected and enhanced.
- Environmental Conservation and Public Recreation Lands
 - These areas are designated for protection and restoration whereby development is restricted.

Assessment of the Growth Centres SEPP South West Growth Area Native Vegetation Protection Maps and Riparian Protection Maps show that flood liable land and South Creek which is considered a major creek is located to the west of the Subject Site. The maps show there are no mapped Vegetation Protected Areas or Riparian Protected Area occurring within the Subject Site and comprised only biodiversity certified land.

Although there were no mapped areas of protected vegetation on site, field surveys have identified that CEEC Cumberland Shale Plain Woodland occurs on site in a highly disturbed condition and is one of the primary CEEC that have been identified for conservation within the Growth Centres.

As described above in **Section 6.0** and **Section 17.0**, the process that led to the certification of areas within the Growth centres have considered these areas of native vegetation during preliminary studies and it was determined that removal of vegetation that did not meet the criteria within the biodiversity certified areas are unlikely to significantly impact threatened flora and fauna and TECs within the biodiversity certified areas and therefore would not require further NSW threatened species assessment.

8.2 Biodiversity Certification Order of the Growth Centres SEPP

The Growth Centres Biodiversity Certification Order includes 41 Relevant Biodiversity Measures (RBMs) that need to be complied with in order to maintain certification. Assessment of the Subject Site in accordance with the 41 RBMs (refer **Table 2 Attachment A**) has shown that the Subject Site is located within biodiversity certified lands, does not contain patches of remnant vegetation that meet the criteria described in **Section 6.0**, and is not located within a Riparian Protected Area or Vegetation protected Area. As such the Subject Site satisfies the RBMs and no further NSW threatened species assessment is required.

9.0 Conclusion

As stated above ground truthing of the site and desktop assessment has identified native vegetation that is commensurate with CEEC Cumberland Shale Plains Woodland. However, the vegetation present on site although collectively it comprises over 4ha, the vegetation is highly disturbed, predominantly fragmented and impacted by edge effects. As a result, under the Growth Centres assessment the native vegetation on site has not met the criteria for conservation within the Growth Centres and as such has been subject to biodiversity certification. Further to this the site complies with the 41 RBMs and is not located within a Riparian Protected Area or Vegetation protected Area. As a result of the biodiversity certification other areas of higher conservation value have been retained within the Growth Centres to offset impacts associated with developing / clearing the native vegetation on site.

As the Subject Site occurs within biodiversity certified land and the native vegetation on site does not meet the criteria outlined in **Section 6.0** there is no further NSW threatened species assessment required as per the conditions under the TSC Act.



10.0 References

DPIE (2010a) Sydney Growth Centres Strategic Assessment Program Report, accessed 20 September 2021, https://www.planning.nsw.gov.au/-/media/Files/DPE/Reports/sydney-growth-centres-strategic-assessment-program-report-2010-11.pdf, Department of Planning, Industry and Environment.

DPIE (2010b) Sydney Growth Centres Strategic Assessment Supplementary Report, accessed 20 September 2021, https://www.planning.nsw.gov.au/-/media/Files/DPE/Reports/sydney-growth-centres-strategic-assessment-supplementary-report-2010-11-part-1.pdf, Department of Planning, Industry and Environment.

DPIE (2021) Register of Biodiversity Certification Orders, accessed 20 September 2021, https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity-offsets-scheme/biodiversity-certification/biodiversity-certification-orders, Department of Planning, Industry and Environment.

GCC (2007) *Growth Centres Conservation Plan Exhibition Draft February 2007*, Eco Logical Australia Pty Ltd, Department of Planning, Department of Environment and Conservation and Growth Centres Commission.

Tozer. M.G, Turner. K, Keith. D.A., Tindall. D, Pennay. C, Simpson. C, MacKenzie. B, Beukers. B, & Cox. S (2010) *Native Vegetation of Southeast NSW: a Revised Classification and Map for the Coast and Eastern Tablelands*, vol 11, edn. 3, pp. 359 – 406, NSW Department of Environment & Climate Change, Scientific Services Division.

Appendix A – Relevant Biodiversity Measure	S



Relevant Biodiversity Measures

The following table has been adapted from the Order to Confer Biodiversity Certification on the State Environmental Planning Policy (Sydney Region Growth Centres) 2006, and has been used to identify that the Subject Site land complies with the Relevant Biodiversity Measures.

Table 2 – Relevant Biodiversity Measures

Section	Relevant Biodiversity Measure	Comment
General	RBM 1 . In the event of any inconsistency between the draft Growth Centres Conservation Plan, the Report on Public Submissions and the conditions of biodiversity certification, the conditions of biodiversity certification shall prevail.	Considered.
General	RBM 2. This biodiversity certification order does not affect any consent or approval granted under Part 3A, Part 4 or Part 5 of the Environmental Planning and Assessment Act 1979 before the order took effect, or any development or activity carried out in accordance with such a consent or approval.	Considered.
General	RBM 3. The Minister, from time to time and as considered appropriate, may amend the conditions of biodiversity certification in accordance with the Act to address anomalies, errors, boundary revisions and/or to take into account new information, but only if the Minister is satisfied that any amendments will not detract from the ability of the SEPP, and other relevant measures, to lead to the overall improvement or maintenance of biodiversity values. Amendments may include, but are not limited to, boundary revisions to reflect updated flood mapping and the outcomes of the assessments completed under conditions 14, 17 and 18. The Minister may, but is not required to, provide for any such amendments to be exhibited for public comment.	Considered.
General	RBM 4. Copies of all final reports, maps, reviews, plans and monitoring data referred to in the conditions of biodiversity certification must be held by the GCC and made publicly available, either on request and/or by a mechanism that is broadly publicly accessible. This does not apply to material that is commercially sensitive or contains sensitive information regarding the location of threatened species, populations or ecological communities or their habitat.	Considered.
Areas Subject to biodiversity Conservation	RBM 5. Pursuant to section 126H of the Act, the biodiversity certification of the SEPP is limited to the certified areas. Note: Pursuant to section 126I of the Act, developments or activities proposed to be undertaken within the certified areas do not need to undertake assessment of impacts on threatened species, populations and ecological communities, or their habitats, that would normally be required by Part 4 or 5 of the Environmental Planning and Assessment Act 1979.	The Subject Site occurs within areas of land that has been certified. No further NSW threatened species assessment is required.
Native vegetation to be retained within the Growth Centres	RBM 6. A minimum of 2,000 hectares of existing native vegetation must be retained and protected within the Growth Centres, either within the certified areas and/or the non-certified areas, subject to conditions 7 to 13 below.	Applies to the Growth Centres Commission (GCC).
Native vegetation to be retained within the Growth Centres - Retention of existing native vegetation during precinct planning	RBM 7. During the precinct planning process, the Growth Centres Commission (GCC) may determine to make areas of existing native vegetation within the non-certified areas available for development if the clearance of such vegetation is considered necessary for either the provision of essential infrastructure and/or to meet the required Development Parameters specified in the Growth Centres Development Code.	The Subject Site occurs within areas of land that has been certified.
Native vegetation to be retained within the Growth Centres - Retention of existing native vegetation during precinct planning	RBM 8. In making a determination under condition 7, the GCC must demonstrate by way of information provided during the public exhibition of the precinct plan (where that exhibition occurs after this order takes effect) that the clearing of any existing native vegetation in the non-certified areas will be offset by:	The Subject Site occurs within areas of land that has been certified.
	a. the protection of an equal or greater area of existing native vegetation elsewhere in the Growth Centres; and/orb. the revegetation and/or restoration of an area of land elsewhere in the Growth	
	Centres, subject to satisfying the following,	
	i. that the clearance of existing native vegetation in the non-certified areas will not affect the capacity to achieve overall improvement or maintenance of biodiversity values for threatened species, populations and ecological communities and their habitats,	
	ii. the revegetated and/or restored areas will be protected,	



Section	Relevant Biodiversity Measure	Comment
	iii. the extent of revegetation and/or restoration compared to clearing of existing native vegetation must be undertaken at a ratio of at least 3:1 (to reflect the greater ecological risks relative to retaining existing native vegetation),	
	iv. areas subject to revegetation and/or restoration must be of a suitable boundary configuration and design to support long-term management,	
	v. revegetation and/or restoration of the proposed areas would not be undertaken under another scheme or regulatory requirement already in operation at the time that the clearing is approved (this includes but is not limited to any approvals, and associated conditions of such approvals, that may be required under the Rivers and Foreshores Improvement Act 1948 and Water Management Act 2000),	
	vi. revegetation and/or restoration will be undertaken by suitably qualified and experienced persons using indigenous plant stock, and	
	vii. sufficient resources will be made available to undertake the revegetation and/or restoration and any necessary follow-up maintenance and monitoring for a minimum period of 5 years following the commencement of the revegetation and/or restoration.	
Native vegetation to be retained within the Growth Centres - Retention of existing native vegetation during precinct planning	RBM 9. Revegetation and/or restoration may be partly counted towards meeting the overall requirement to protect 2,000 hectares of existing vegetation required in condition 6. The amount that may be counted shall be calculated by dividing the total area of revegetation and/or restoration required under condition 8b(iii) by 3.	The Subject Site occurs within areas of land that has been certified.
	Note: for example, if 9 hectares of revegetation is undertaken then 3 hectares may be counted.	
Native vegetation to be retained within the Growth Centres - Retention of existing native vegetation during development	RBM 10. In the non-certified areas, proposals to clear existing native vegetation shall be subject to the relevant development controls in the SEPP and Sydney Regional Environmental Plan No. 31 – Regional Parklands, and the requirements of the Environmental Planning and Assessment Act 1979.	The Subject Site occurs within areas of land that has been certified.
Native vegetation to be retained within the Growth Centres - Retention of existing native vegetation during development	RBM 11. Where there are essential infrastructure proposals, including but not limited to proposals under Part 3A of the Environmental Planning and Assessment Act 1979, that involve clearing of existing native vegetation in the non-certified areas and that do not require development consent under the SEPP, such clearing must be offset by applying the same requirements specified in condition 8 above.	This planning proposal is not considered to be an essential infrastructure proposal and the Subject Site occurs within areas of land that has been certified.
	In this case the offsets may be located outside of the Growth Centres (but within the Cumberland Plain of Western Sydney, as defined in condition 32) if the GCC is satisfied that there are no practicable offset options within the Growth Centres and all other requirements of condition 8 will be met. However, any offsets outside the Growth Centres cannot be counted towards meeting the requirements of condition 6.	
Native vegetation to be retained within the Growth Centres - Retention of existing native vegetation shown in areas marked with red hatching	RBM 12. Notwithstanding any other conditions of biodiversity certification, in the lands marked by a red hatching on the biodiversity certification maps existing native vegetation must not be cleared unless it is in accordance with a plan of management or unless such clearance has been agreed to by the DECC.	The Subject Site occurs within areas of land that has been certified and does not occur in areas of land marked with red hatching within the Order.
Native vegetation to be retained within the Growth Centres – Ground-truthing of existing native vegetation	RBM 13. If new information becomes available after the biodiversity certification order took effect that demonstrates that the vegetation within an area does not otherwise meet the definition of existing native vegetation, then for the purposes of conditions 7 to 8 and condition 11 to 12 only the area of confirmed existing native vegetation shall be considered.	The Subject Site occurs within areas of land that has been certified and certification indicates that the Subject Site and associated vegetation have been considered within the preliminary studies and the conservation outcomes of the Growth Centres Program has identified that impacts to vegetation within the certified lands of the Growth Centres are unlikely to be significant and the set conservation targets of the Growth Centres Program would offset potential impacts to fragmented patches of native vegetation identified within certified areas.
Additional conservation actions within the Growth Centres – native vegetation	RBM 14. During or before the preparation of the relevant precinct plan(s) under the Growth Centres Development Code, a further detailed assessment must be undertaken of the areas adjoining or proximate to the Shanes Park Air Services Australia site marked in blue hatching on the biodiversity certification maps.	Not Applicable to the Subject Site.
Additional conservation actions within the Growth Centres – native vegetation	RBM 15. The assessment referred to in condition 14 must examine whether the areas meet the criteria specified in Schedule 3.	Not Applicable to the Subject Site.
Additional conservation actions within the Growth Centres – native vegetation	RBM 16. Based on the outcomes of the assessment the DECC shall provide advice to the Minister on whether the areas should be included within the certified areas or the non-certified areas shown on the biodiversity certification maps.	Not Applicable to the Subject Site.



Section	Relevant Biodiversity Measure	Comment
Additional conservation actions within the Growth Centres – plants	RBM 17. During or before the preparation of the relevant precinct plan(s) under the Growth Centres Development Code relating to the areas referred to in the table within the Order, the following actions must be undertaken for the listed threatened species that require assessment if the site occurs within black hatching areas of the biodiversity certification map: Acacia pubescens, Pimelea spicata, Persoonia hirsuta, Leucopogon fletcheri, Darwinia biflora Hibbertia superans, Epacris purpurascens var purpurascens and Eucalyptus sp "Cattai".	The Subject Site does not occur within areas of black hatching identified on the biodiversity certification map (Cross Street, Kemps Creek and Thirty-second Avenue, Austral; Denham Court Road; North Kellyville) and field surveys did not detect these species during the survey period.
Additional conservation actions within the Growth Centres – animals	RBM 18. During or before the preparation of the relevant precinct plan(s) under the Growth Centres Development Code relating to the area referred to in the table within the Order, threatened species that require assessment if the site occurs within black hatching areas of the biodiversity certification map: Green and Golden Bell Frog,	The Subject Site does not occur within areas of black hatching identified on the biodiversity certification map (at Riverstone) and habitat assessment during field surveys identified that it is unlikely for the species to occur on site.
Additional conservation actions within the Growth Centres – development sites	RBM 19. Within twelve months of the biodiversity certification order taking effect, the GCC (in consultation with the DECC) must put in place procedures so that all future precinct plans (excluding any plans that were publicly exhibited before the biodiversity certification order took effect), where practicable, provide for the appropriate re-use of: a. native plants (including but not limited to seed collection) and the relocation of native animals from development sites, prior to development commencing; and	Considering CEEC native vegetation has been identified within the Subject Site the Planning Proposal needs to incorporate the re-use of native plants including retention of native vegetation in the landscape plan where possible, collection of seed from the site or with local provenance to use within the landscaping of the site and to have native animals identified within the site relocated prior to the commencement of development. Additionally, where native vegetation is cleared as part of a proposed development it
	b. top soil from development sites that contain known or potential native seed bank. For the purposes of condition 19a and 19b appropriate uses may include, but are not limited to, application in re-vegetation or restoration works and landscaping in the	is proposed that the soil from this area is retained and utilised within the site as part of the landscape plan to assist with the regeneration of native vegetation on site.
Conservation Fund	Growth Centres. RBM 20. For the purposes of the conditions of biodiversity certification, references to dollar values are taken to be 2005/2006 values. All values shall be indexed in accordance with the "land index" to be published by the GCC, as detailed in the Special Infrastructure Contribution Practice Note.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Conservation Fund	RBM 21. Over the life of the development of the Growth Centres funding shall be provided to establish a Conservation Fund of at least \$530 million to be used for biodiversity conservation and regional open space purposes. \$397.5 million of the Conservation Fund is planned to be used to acquire lands and/or enter into conservation agreements over lands that are outside of the Growth Centres for the primary purpose of biodiversity conservation.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Timing and delivery of conservation funding	RBM 22. For that portion of the Conservation Fund that is to be used to fund the purchase and/or entering into conservation agreements over lands that are outside the Growth Centres, the following conditions apply:	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	a. commencing in the 2008/2009 financial year, and continuing every financial year thereafter until the Conservation Fund is exhausted, the GCC must work with DECC to arrange for the provision of an annual contribution to fund these actions outside the Growth Centres in accordance with an indicative ten-year timetable of payments to be submitted by the GCC for approval of the Minister within six months of the date of this certification order. Once approved, the indicative timetable shall be incorporated as Schedule 4 of the biodiversity certification order in accordance with condition 3;	
	b. the indicative ten-year timetable of payments is to be generally prepared by determining the proportion of total remaining lot production in the Growth Centres that is expected to occur within a given financial year and to then allocate for that financial year the same proportion of the remaining amount of the planned \$397.5 million funding that has not been previously allocated;	
	c. to ensure adequate tracking of payments against the planned \$397.5 million allocation, the GCC must ensure that the indicative ten-year payment timetable identifies the payments in both current and equivalent 2005/06 dollar values;	
	d. an updated indicative ten-year payment timetable (to provide details of the payments for the subsequent ten years) must be provided annually (by June of each financial year) by the GCC to the DECC;	
	e. the annual contributions must be used for the purposes detailed in conditions 23 and 24 below;	



Section	Relevant Biodiversity Measure	Comment
	f. notwithstanding conditions 22a to 22e inclusive, if requested by the DECC the GCC must use its best endeavours to support the provision of additional funding contributions to accelerate land acquisition and/or conservation agreements over land outside the Growth Centres in any given financial year. The following conditions also apply,	
	i. if an additional contribution is obtained in a given financial year, the GCC and DECC shall determine how subsequent annual contributions are to be reduced to account for the additional contributions in that financial year, and	
	ii. if, despite best endeavours, an additional contribution is not obtained, the provisions of condition will not be triggered with respect to this additional amount.	
Use of conservation funding	RBM 23. As stated in condition 21, \$397.5 million of the Conservation Fund is planned to be used by the DECC to arrange for the purchase and/or establishment of conservation agreements over lands outside the Growth Centres for the primary purpose of biodiversity conservation. This portion of the Conservation Fund must be allocated in accordance with the preferences for location and conservation values that are detailed in conditions 32, 33 and 34.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Use of conservation funding	RBM 24. As part of the use of funds under condition 23, the DECC may arrange for allocation of a reasonable proportion towards the administration costs of purchasing land and/or entering into conservation agreements, and for the initial management costs of purchased land. However, from the commencement of the 2012/2013 financial year any such allocations must not exceed 5% of the annual contribution from the Conservation Fund for the purchase and/or establishment of conservation agreements over lands outside the Growth Centres in any single financial year.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Use of conservation funding	RBM 25. Funding that is planned to be allocated from the Conservation Fund within the Growth Centres shall be used to fund the purchase of lands as identified in the SEPP (as gazetted in July 2006), or the establishment of conservation agreements over an area or areas of land within the Growth Centres.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Timing of expenditure	RBM 26. The DECC must use its best endeavours to ensure that funds allocated within a financial year for the purchase and/or establishment of conservation agreements over lands outside the Growth Centres are allocated for those purposes as expeditiously as possible.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Non-delivery of funding	RBM 27. Despite the requirements of condition 22, if in any financial year ("the first financial year") the full annual contribution is not provided then: a. the Minister must consult with the Minister for Planning regarding the continued operation of section 126l of the Act in relation to the certified areas; and	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	 b. based on the outcomes of that consultation, if the Minister is satisfied that appropriate arrangements have been put in place to rectify the funding shortfall then section 126l shall continue to have effect for the certified areas; or c. the Minister shall determine whether to suspend or revoke the biodiversity certification order in accordance with the Act. 	
Non-delivery of funding	RBM 28. If no decision has been made in accordance with conditions 27b or 27c within six months of the end of the relevant financial year, then the provisions of section 126l of the Act are taken to no longer have effect in relation to the certified areas, until such time as the outstanding contribution is provided or the Minister is satisfied that appropriate arrangements have been put in place to rectify the funding shortfall. This condition does not affect any consent or approval granted under Part 3A, Part 4 or Part 5 of the Environmental Planning and Assessment Act 1979 before the condition took effect, or any development or activity carried out in accordance with such a consent or approval. For the purposes of condition 27 and 28, "rectify" means amending the indicative timetable referred to in condition 22 to ensure that within four financial years of the first financial year the level of funding provided will be at least equal to the amount of funding that would otherwise have been provided by that time under the provisions of condition 22, or achievement of a comparable or better conservation outcome to the satisfaction of the Minister.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Non-delivery of funding	RBM 29. Conditions 27 and 28 do not have effect where the annual contribution required under condition 22 has not been provided because the balance of unspent funding being held in the Conservation Fund for the purchase and/or establishment of	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).



Section	Relevant Biodiversity Measure	Comment
	conservation agreements over lands outside the Growth Centres has reached a limit to be determined by the Minister.	
Reporting	RBM 30. Commencing at the end of the 2008/2009 financial year, and at the end of every financial year thereafter until the Conservation Fund is exhausted, the GCC must provide the following information to the DECC within 2 months of the end of the relevant financial year:	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	a. an estimate of the amount of existing native vegetation, specified by vegetation community type, that has been cleared within the Growth Centres. This may be based on, but is not limited to, the use of information on subdivision development approvals as a surrogate measurement for clearing, or some other basis agreed between the GCC and DECC.	
Reporting	RBM 31. Commencing at the end of the 2008/2009 financial year, and at the end of every financial year thereafter until the Conservation Fund is exhausted, the DECC must arrange for the publication of a report detailing the following matters:	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	 a. the information provided in condition 30; b. the amount of funding provided from the Conservation Fund in the financial year for the purchase and/or establishment of conservation agreements over lands outside the Growth Centres; 	
	c. the amount expended in the financial year, including the amount spent on land purchase, conservation agreements, administration and initial management costs for purchased land;	
	d. a summary of the conservation outcomes achieved by that expenditure; and	
	e. the predicted funding provision for the program for the next 10 years.	
Location of expenditure of funds	RBM 32. The funding identified in condition 23 must be spent within the following locations in the order of preference identified below.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Location of expenditure of funds	First Preference: Priority areas within the Cumberland Plain a. First preference shall be allocated every financial year to the purchase of land and/or entering into conservation agreements over land that is:	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	• identified as "Regional Biodiversity Corridors" and "Western Sydney Priority Areas" on the map labelled "Regional Biodiversity Corridors and priority fauna habitats" in the Hawkesbury Nepean Catchment Action Plan; AND	
	also occurs within the Cumberland Plain of Western Sydney; AND	
	generally, meets the criteria specified in condition 33.	
	Where there is insufficient available land, or the cost-effectiveness of purchasing and/or entering into conservation agreements over lands in the above category is considered by the DECC to be too low, or the criteria in condition 33 cannot be met, then the funding may be allocated by DECC to be used on lands in accordance with condition 32b below.	
Location of expenditure of funds	Second Preference: Priority areas within the Hawkesbury Nepean Catchment	Applies to the Growth Centres Commission (GCC) and Director-General of the
	b. As second preference, funding shall be allocated every financial year to the purchase of land and/or entering into conservation agreements over land that is:	Department of Environment and Climate Change (DECC).
	• identified as "Regional Biodiversity Corridors" and "Western Sydney Priority Areas" on the map labelled "Regional Biodiversity Corridors and priority fauna habitats" in the Hawkesbury Nepean Catchment Action Plan; AND	
	• is not identified in condition 32a; AND	
	generally, meets the criteria specified in condition 33.	
	Where there is insufficient available land, or the cost-effectiveness of purchasing and/or entering into conservation agreements over lands in the above category is considered by the DECC to be too low, or the criteria in condition 33 cannot be met,	



Section	Relevant Biodiversity Measure	Comment
	then the funding may be allocated by DECC to be used on lands in accordance with condition 32c below.	
Location of expenditure of funds	Third Preference: Grassy Woodlands within the Hawkesbury Nepean Catchment c. As third preference, funding shall be allocated every financial year to the purchase of land and/or entering into conservation agreements over lands that: • contain grassy woodlands within the Hawkesbury Nepean Catchment; AND • are not identified in conditions 32a or 32b; AND • generally, meets the criteria specified in condition 33.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	Where there is insufficient available land, or the cost-effectiveness of purchasing and/or entering into conservation agreements over lands in the above category is considered by the DECC to be too low, or the criteria in condition 33 cannot be met then the funding may be allocated by DECC to be used on lands in accordance with condition 32d below.	
Location of expenditure of funds	Fourth Preference: Grassy Woodlands within the Sydney Basin d. As fourth preference, funding shall be allocated every financial year to the purchase of land and/or entering into conservation agreements over lands that satisfy the following criteria:	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	 land containing grassy woodlands within the Sydney Basin; AND that is not identified in conditions 32a, 32b or 32c; AND generally, meets the criteria specified in condition 33. Where there is insufficient available land, or the cost-effectiveness of purchasing	
	and/or entering into conservation agreements over lands in the above category is considered too low, or the criteria in condition 33 cannot be met, then the funding may be allocated by DECC to be used on lands in accordance with condition 32e below.	
Location of expenditure of funds	Fifth Preference: other lands identified by the DECC e. As fifth preference, funding shall be allocated every financial year to the purchase of land and/or entering into conservation agreements over land that is: • within the Sydney Basin; AND • is not identified in conditions 32a, 32b, 32c or 32d; AND • generally, meets the criteria specified in condition 33.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Location of expenditure of funds	• "cost-effectiveness" means a consideration of the conservation objectives that would be achieved by purchasing or entering into a conservation agreement for a parcel of land and the cost of the purchase and/or conservation agreement, relative to the cost of achieving the same or similar conservation objectives on other parcels of land within the Sydney Basin. • "Cumberland Plain of Western Sydney" means the geographic area by that name as identified in National Parks and Wildlife Service (2000), The native vegetation of the Cumberland Plain, Western Sydney – Technical Report, NSW NPWS, Hurstville. • "grassy woodlands" mean the vegetation formation by that name as defined in Keith, D. (2004), Ocean shores to desert dunes: the native vegetation of New	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	South Wales and the ACT. NSW Department of Environment and Conservation. Hurstville, NSW. • "Hawkesbury Nepean Catchment" means the area of land described in the Hawkesbury Nepean Catchment Action Plan.	



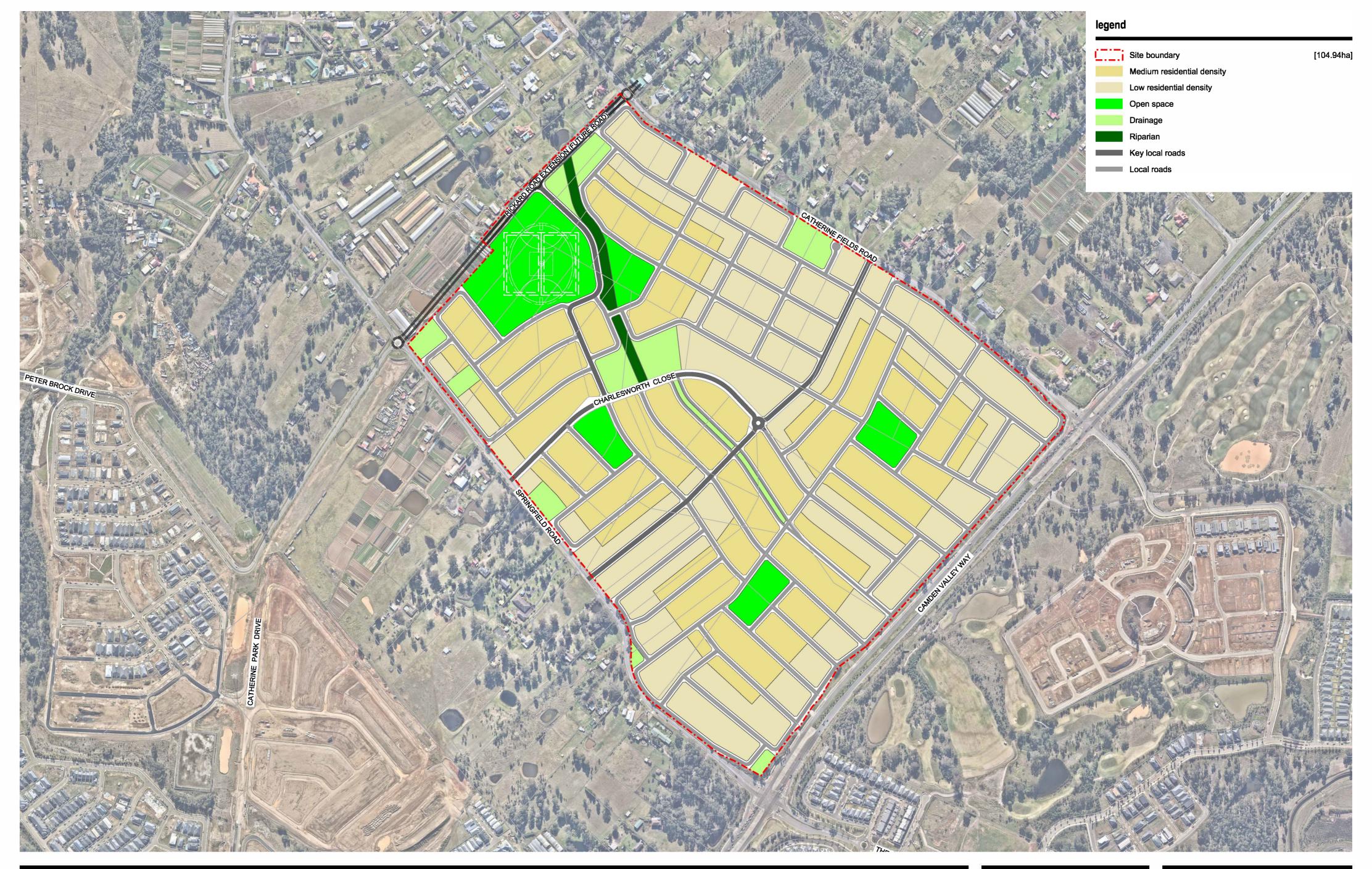
Section	Relevant Biodiversity Measure	Comment
	"Hawkesbury Nepean Catchment Action Plan" means the Hawkesbury-Nepean Catchment Action Plan 2007-2016 published by the Hawkesbury- Nepean Catchment Management Authority (October 2006).	
	• "Sydney Basin" means the areas as defined by Environment Australia (2000), Revision of the Interim Biogeographic Regionalisation for Australia (IBRA) and development of Version 5.1 – Summary Report. Department of Environment and Heritage, Canberra.	
Conservation values to be protected through the expenditure of funds	RBM 33. Within each area specified in condition 32, the lands to be targeted for purchase and/or conservation agreement outside the Growth Centres shall be guided by consideration of the following criteria:	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	 large remnants of intact native vegetation with the greatest potential for retaining biodiversity values over time; 	
	 vegetation communities that are under-represented in the protected area network; 	
	 areas of equivalent or better conservation value to that which are to be cleared within the Growth Centres; 	
	 areas that contain habitat for threatened species, including but not limited to species to be affected by development of the Growth Centres; 	
	areas that have the highest cost effectiveness;	
	 conservation reserve design principles, such as size, boundary configuration and landscape context; 	
	• previous land uses;	
	likely threats (such as existing or future adjoining land uses); and	
	 availability (including the willingness of landowners to either sell land or place it under a conservation agreement). For the purpose of clarification, no land is intended to be compulsory acquired in order to meet any of the conditions of biodiversity certification. 	
	For the purposes of this condition, and the avoidance of doubt, the above attributes are to be considered and applied as a guide only.	
Conservation values to be protected through the expenditure of funds	RBM 34. The lands to be targeted for purchase and/or conservation agreement outside the Growth Centres must include a known population(s) or suitable habitat for the plant species <i>Cynanchum elegans</i> . Note: this action is required to ensure an appropriate improve or maintain outcome for this species, which occurs in the Growth Centres but is not currently protected by measures under the Growth Centres SEPP.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Future precinct plans	RBM 35. During the preparation of future precinct plans (excluding any precinct plans already publicly exhibited before this order took effect) the GCC must undertake and make publicly available an assessment of the consistency of the proposed precinct plan with the conditions of biodiversity certification. This may occur during or before any public exhibition of future draft precinct plans.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Future threatened species listings or discoveries	RBM 36. Where a preliminary determination is made under the Act to list a species, population or ecological community, and that species, population or ecological community may or is known to occur within the Growth Centres, then the GCC must (as soon as practicable) provide advice to the DECC on whether:	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC). No new threatened flora or fauna or TECs were identified within the Subject Site during
	a. the species, population or ecological community is known or likely to be present in the Growth Centres;	the survey period.
	b. it was considered during the preparation of the draft Growth Centres Conservation Plan by the GCC; and	
	c. whether the SEPP, and related measures, provides adequate protection for the species, population or ecological community.	
Future threatened species listings or discoveries	RBM 37. Based on the information provided in accordance with condition 36, and any other relevant matters, the DECC shall advise the Minister on whether to formally review, maintain, modify, suspend or revoke the biodiversity certification of the SEPP if the species, population or ecological community is listed under the Act.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).



Section	Relevant Biodiversity Measure	Comment
Review	RBM 38. A review of the biodiversity certification of the SEPP must be undertaken by the DECC every four years after the biodiversity certification order takes effect (to be completed within two months of each four year anniversary). The timing of the review may be adjusted by DECC to coincide with any planned review of the operation of the Special Infrastructure Contribution within the Growth Centres.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Review	RBM 39. The purpose of the review is to assess progress in achieving an overall improvement or maintenance of biodiversity values, including review of the arrangements for the provision of funds to the Conservation Fund and the allocation of those funds within and outside of the Growth Centres.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
Review	RBM 40. To assist in the review required under condition 38, the GCC must provide the following information to the DECC in a timely manner:	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).
	a. an estimate of the amount of existing native vegetation, specified by vegetation community type, that has been cleared within the Growth Centres, including maps of known locations, within the four year period (or adjusted period);	
	b. progress in achieving the requirements of condition 6, including the	
	following,	
	 i. the amount of existing native vegetation that has been retained and protected within planning precincts, 	
	ii. the amount of revegetation and/or restoration that has occurred (or is planned to occur) within planning precincts,	
	iii. an indicative estimate of the amount of existing native vegetation, and the amount of revegetated and/or restored areas, planned to be protected in the remaining precincts within the Growth Centres that are yet to be released;	
	c. an overview of any amendments to the SEPP or related measures that have occurred within the four year period (or adjusted period);	
	d. any recommendations that would improve the operation of the conditions of biodiversity certification including, but not limited to, any modifications or revisions to the conditions themselves and the arrangements for management and allocation of funds from the Conservation Fund; and	
	e. any other information that is considered relevant by the DECC to assist in reviewing whether the SEPP, and any other relevant measures, will continue to lead to the overall improvement or maintenance of biodiversity values.	
Review	RBM 41. Based on the information provided under condition 40, and any other relevant matters, the DECC shall advise the Minister on whether biodiversity certification should be maintained, modified, suspended or revoked.	Applies to the Growth Centres Commission (GCC) and Director-General of the Department of Environment and Climate Change (DECC).

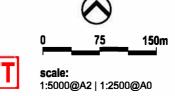


Appendix B – Indicative Structure Plan









revision: 004 05 proj: 022 MGA94-56

revision:
05

proj:
MGA94-56

drawn:
BR

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Appendix C – Author CVs

JEREMY BURRILL Curriculum Vitae

Jeremy works with AEP in the role of Ecologist. He is a graduate of environmental science and management, and has experience in voluntary roles in environmental fields, involving fauna and flora surveying, consultancy projects and natural resource management. His background in environmental fields with his growing ecological knowledge is utilised in a diverse array of applications in his current role.

Qualifications

 Bachelor of Environmental Science (Environmental Management and Sustainability) Deakin University (2020)

Further Education & Training

- Victorian Driver's License
- Work Health & Safety General Construction Induction
- Work Safely at Heights

Fields of Competence

- Ecological field surveys
- Fauna surveys and trapping
- Natural resource management

Volunteer Experience

- Overseas University Volunteer Placement (New Zealand, 2018)
- Industry Placement (Parks Victoria, 2019)

Relevant Employment History

Oct 2020 – Present Junior Ecologist

Anderson Environmental and Planning, Newcastle

Currently employed by Anderson Environment & Planning to assist in the provision of consulting services to land, property, legal and government sectors. Covering ecological, project management, environmental, bushfire, planning services, advices, strategy and representation.

Natalie Black Curriculum Vitae

Natalie works with AEP in the role of Senior Environmental Manager. She has extensive knowledge in environmental management, environmental planning, and report writing and assessment. With a detail understanding of planning, catchment management, coastal management and rehabilitation. Natalie has had a successful career with both state and local government in conservation, planning and field investigation roles. Natalie has also gained extensive communication skills and project management through her previous career in lecturing. Her background and experience in the ecological and planning fields is utilised in a diverse array of application in her current role.

Qualifications

- B.Sc (Hons), University of Newcastle, 2002 Sustainable Resource Management and Marine Science.
- Master Planning, University of Technology Sydney 2007.
- Certificate IV Training and Assessment at NSW TAFE 2012.
- BAM Assessor; accreditation number: BAAS19076.

Certification

- Evidence Gathering and Legal Process (Australian Institute of Environmental Health).
- Conflict Resolution Course (LGSA).
- Report Writing Course (LGSA).
- Powerful Presentation (LGSA).
- NSW Rural Fire Services Bush Fire Assessment
- Relocation of Threatened Species (Botanical Gardens Sydney).
- Sustainable Home Assessment Reduction Revolution.
- Flora and Fauna Survey Assessments Niche Environment and Heritage.
- First Aid TAFE.

Fields of Special Competence

- Environmental Planning
- Environmental Management and rehabilitation of catchments coastal waterways. Statement of Environmental Effects (preparation and assessing).
- Fish Passage
- Marine ecosystems including; mangroves, seagrasses, algae, Fauna and habitat assessment.
- vegetation.
- Communicating with a wide range of stakeholders.
- Development Application.
- Education in both Environmental and Planning industries.
- Koala Plans of Management.
- Policy Development.

Employment History

2019 to present AEP Senior Environmental Manager

2010 to 2019

Natalie Black is the Principal Environmental Planner for Black EARTH Environmental. Working a a range of projects, Bush Fire Assessments, Landscaping, Development Applications, Statements of Environmental Effect's, Environmental Management Plans, Sustainability Assessment of both private and businesses, sustainable gardens, environmental assessments for proposed projects and environmental advice and volunteering for local Sustainable Community Group and Landcare. During this time Natalie also lectured at Hunter TAFE teaching a range of environmental units both face to face and on-line to a varying range of qualification and levels.

2003 to 2010

Natalie was the Natural Resource Manager and Development Assessment Officer at Lismore City Council working with diverse range of professions such as engineers, town planners, environmental health officer, accountants, building surveyors, arborists, councillors. During this time the main projects were grants application, restoration projects, flora and fauna assessments, environmental legal adviser, bush fire assessments, strategic work, development application assessment (ranging from sheds to Designated Developments) and council development application team for internal projects, Council's for climate change, water wise programs and others. During 2006 -2007 Natalie was the lead Environmental Officer and Development Planner for the development of Council Plans of Management (POM). The POMs were for each parcel of land owned and managed lands, by Council. The parcels of land ranged from easements, parks and recreation areas to urban bushland, each POM provided clear guidelines and procedures for all works including civil, maintence and regeneration etc.

2002 to 2003 was a step into the Policy unit within DPI where Natalie was part of the team working on the Jervis Bay Indigenous Fishing Strategy, and the closure of Port Botany. Dealing with many stakeholders and running workshops with Ministers and community. During 2003 with Natalie was the North Coast Fish Passage Officer. Managing an Environmental Trust Grant of \$1 million to remove 50 structures that block fish passage within the catchments of the North Coast. This project had all 50 sites contracted by the end of the 12 months with 70% of these projects commenced. This role allowed for the development of field assessments, independent work and communication with a range of stakeholders.

2000 saw the commencement of Natalie's career with NSW Department of Primary Industries (Fisheries Unit) in the Office of Conservation in Sydney. Natalie was part of the Conservation team that reviewed integrated development applications in the Sydney Region, with a focus on the seagrasses present within the estuaries. The assessments ranged from jetties to the Lane Cove Tunnel, North West T-Way and the expansion of the M7 and fish ladders.

BSc Honours Project was research paper into the variations of *Zostera capricorni* wrack located within the Tuggerah Lakes system in comparison to Brisbane Waters and Lake Macquarie.

Simon Purcell Curriculum Vitae

Simon works with AEP in the role of Senior Ecologist. Simon has over 7 years of professional experience managing projects in the fields of terrestrial ecology, mining and mine rehabilitation and environmental management.

Qualifications

- Bachelor of Applied Science, Major Wildlife Science, University of Queensland Gatton 2013
- Certificate III in Animal Care and Management, Companion Animal Services (2008)

Further Education & Training (select summary)

- Current NSW Class C Driver's Licence. Experienced 4WD operator.
- 2019 First AID, CPR and Remote First AID
- 2019 HLTAID001 Provide Cardiopulmonary Resuscitation
- 2019 HLTAID005 Provide First Aid in Remote Situations
- 2018 Bioacoustic Processing Workshop run by Ted Pedersen- Automated Signal Detection and Acoustic Remote Sensing
- 2017 Venomous Snake Handling
- 2015 Venomous Snake and Fauna Handling Geckoes Wildlife

Fields of Special Competence

- Terrestrial Ecology field survey, covering terrestrial flora and fauna
- Project Management

Relevant Employment History

2020 (November) -present Senior Ecologist

Anderson Environment & Planning, Newcastle

• Currently employed by Anderson Environment & Planning to assist in the provision of consulting services to land, property, mining industry, legal and government sectors. Covering ecological, project management, environmental, planning services, advices, strategy and representation.

2018-2019 Team Leader / Ecologist

Ecotone Flora Fauna Consultants, Weipa, QLD

- Conducted client liaison meetings, providing ecological advice and recommendations for flora, fauna and land management, complying with Queensland state and Commonwealth environmental legislation.
- Wrote proposal and executed surveys for Prefeasibility studies and EIS on Western Cape York for multi-national mining company complying with Commonwealth environmental legislation.

- Negotiated increases to budget and survey requirements with the client in relation to ongoing changes and project requirements
- Led high level discussions with the client to provide new services.
- Developed wide scale camera monitoring program to assess presence /absence of EVNT fauna within the survey site.
- Complex logistical planning for remote work
- Co-developed and implemented new safety system within the business
- Mentored project managers through training, and leadership guidance to ensure quality and standards of business were met
- Managed human relation matters within the business
- Digitally transformed infield data collection through roll out of ArcGIS Collector, leading to the reduction in the use of paper in the field.

2014-2018 Team Leader / Ecologist

Ecotone Flora Fauna Consultants, Weipa, QLD

- Lead project manager (6 years) for all aspects of mine / drill preclearing environmental surveys across three different mine sites and exploratory sites, including during the construction phase of a new mine in the Weipa region.
- Project managed and participated in numerous annual EVNT projects that led to cultural and process practices changing within a multinational mining company.
- Played a critical role in maintaining client and stakeholder relationships and built stability with onsite leadership to further grow business opportunities.
- Maintained client confidentiality on sensitive and impactful projects.
- Ensured all projects complied with Queensland state and Commonwealth environmental legislation and clients Environmental Authority.
- Assisted in the development of growth and innovation projects such as cloud-based document storage solution to support multi-site users.

2013-2014 Field Technician / Ecologist

Ecotone Flora Fauna Consultants, Weipa, QLD

- Pre-clear flora and fauna mining and drilling programs
- Baseline fauna surveys of future mining areas
- Sensitive vegetation ground truthing
- EVNT flora and fauna surveys
- Seed Processing (storing, drying management of inventory)
- Mixing of seed in preparation for annual rehabilitation season

2010-2012 Mine Operator and Trainer

Rio Tinto, Weipa, QLD

- Acted as Crew Leader to manage 30 mine operators, production targets and minimising environmental impacts
- Skilled Caterpillar 992G, 993K & Komatsu WA900 Loader and 776D, 777F and 785C Caterpillar haul truck operator
- Crew Trainer/Assessor completed five certificate IV modules to Training and Assessing.

2009 - 2010 Parks and Garden Maintainer

Spotless Group, Weipa, QLD

- Attained six competencies towards Certificate III Forest Growing and Management.
- Maintained local green spaces and houses.

2009-2009 Vet Nurse

Tableland Veterinary Service, Weipa, QLD

- Prepared surgery for surgeries including use of autoclave to sterilise implements
- Administered sedation via injections in the muscle and intravenously
- Prepared and monitored animals before, during and after surgeries
- Monitored animal and anaesthetic during surgery focussing on breath rate, colour of gum and pupil movements
- Took blood samples from veins and prepared samples of foreign bodies for analysis
- Successfully directed and carried out on-call emergency cases with vet assistance over the phone

2003 – 2009 Manager

The Pet Centre, Sydney, NSW

2001 – 2003 Sales Assistant

The Pet Centre, Sydney, NSW

- Implemented standard procedures for staff to follow
- Focussed on achieving a high level of OHS standards within the store
- Responsible for daily takings up to five thousand dollars per day
- Accountable for people management including rosters, recruitment and managing employee issues
- Responsible for management of store inventory
- Developed skills in handling a range of domestic animals
- Maintained animal's health and welfare in store and complied with state laws and regulations
- Analysed store's and customer's aquarium water quality
- Developed sound knowledge of animals including their origin, identification and general requirements

Relevant Volunteer Experience

2012 Fauna Spotter / Field Assistant

Humble Bee Films

• Volunteered as a fauna spotter/field assistant with Dr Brad Purcell and Humble Bee Films in a ten day research camp, during the production of the natural history documentary "Dingo".

2012 Volunteer Ecological Field Assistant

Rio Tinto, Weipa, QLD

- Participated in an ethno-botanical workshop with Rio Tinto Alcan Land and Rehabilitation team.
- Participated as a field technician during pre-mining survey work. The work included assessing flora and the land formations to identify buffer zones for natural drainage systems and sensitive areas in the Andoom mine site Weipa.

2012 Fauna Technician

Brad Purcell PhD, Greater Blue Mountains World Heritage Area

 Field technician for Brad Purcell during his doctoral research project on dingoes in the Greater Blue Mountains World Heritage Area. Developed skills in use of VHF radio tracking to retrieve collars, triangulation method to determine positioning of dingoes or deployed collars and traversing bushland.

Stevie Kay

Curriculum Vitae

Stevie works with AEP in the role of Ecologist. Whilst studying at the University of Newcastle he conducted ecological field studies as a requirement of his degree courses. Working for NSW Department of Primary Industries (NSW DPI) at Port Stephens Fisheries Institute he gained further experience in ecological field surveys as a field technician and project officer. He has experience in targeted fauna and flora surveys, Koala Spot Assessment Technique (SAT) surveys and tree surveys.

Qualifications

• Bachelor of Science (Marine Science), University of Newcastle (2003)

Licences/Certificates

- Senior First Aid
- Class C NSW Drivers Licence
- · Work at Heights
- 4WD Safe Driving
- Construction White Card

Field Survey Experience

- Aquatic vegetation and fish survey
- Terrestrial fauna survey, including koala SAT surveys and spotlighting

Volunteer Experience

- Bush Regeneration Volunteer, Hunter Indigenous Plants
- Permaculture Design, various locations

Employment History

Feb 2020 – Current	Ecologist
	Anderson Environment & Planning, Newcastle
Nov 2016 - May 2017	Observer
	NSW DPI Fisheries
Jan 2002 - Feb 2009	Technician/Project Officer
	NSW DPI Fisheries
Sept 2010 – Feb 2020	Facilitator
	Pinnacle Team Events