



Environment,  
Climate Change  
& Water



Planning

# Sydney Growth Centres Strategic Assessment Supplementary Report

November 2010

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# Abbreviations

ABBREVIATION	DESCRIPTION
CCC	Cumberland Conservation Corridor
CPW	EPBC Act listed Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest
DECCW	NSW Department of Environment, Climate Change and Water
DoP	NSW Department of Planning
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	NSW <i>Environmental Planning and Assessment Regulation 2000</i>
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
Growth Centres SEPP	<i>State Environmental Planning Policy (Sydney Region Growth Centres) 2006</i>
HMV	High Management Viability
MNES	Matters of National Environmental Significance
NSW	New South Wales
Offset Program	Growth Centres Biodiversity Offset Program
RBMs	Relevant Biodiversity Measures
SEWPaC (formerly DEWHA)	Commonwealth Government Department of Sustainability, Environment, Water, Population and Communities
The Program	Sydney Growth Centres Program
ToR	Terms of Reference
TSC Act	NSW <i>Threatened Species Conservation Act 1995</i>

# 1. Introduction

## 1.1 THE SYDNEY GROWTH CENTRES PROGRAM

In November 2009, the New South Wales (NSW) and Commonwealth Governments commenced a strategic assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) of the potential impacts likely to arise through implementation of the Sydney Growth Centres Program.

The Sydney Growth Centres Program (the Program) seeks to provide for residential, employment and conservation areas and related infrastructure within the North West and South West Growth Centres of Sydney (see Figure 1). It also seeks to provide for a range of conservation measures throughout Western Sydney and the broader Sydney region.

Planning for the Growth Centres began in 2004 and evolved from the need to provide housing and employment lands and associated infrastructure over the next 30+ years in Sydney. The 2005 *Metropolitan Strategy: City of Cities - A Plan for Sydney's Future* identified the Growth Centres as the preferred option for delivering these outcomes.

Since that time, the Program has been developed and approved under NSW planning and threatened species legislation. It is now the subject of consideration by the Commonwealth.

The Sydney Growth Centres strategic assessment under the EPBC Act comprises three key documents:

1. The Draft Strategic Assessment Report which was publicly exhibited and which provides a detailed assessment of the proposed impacts of the Program for matters of national environmental significance.
2. The Supplementary Assessment Report (this report) which addresses the issues raised in the public exhibition process and analyses the outcomes of the Program.
3. The final Program Report which identifies the elements of the program and the commitments and undertakings of the NSW Government for the protection and management of matters of national environmental significance protected under the EPBC Act.

## 1.2 THE EPBC ACT AND STRATEGIC ASSESSMENT

The EPBC Act is the Commonwealth Government's key piece of environmental legislation. It protects matters of national environmental significance which include:

- World heritage sites;
- National heritage places;
- Wetlands of international importance;
- Nationally threatened species and ecological communities;
- Migratory species;
- Commonwealth marine areas;



- Nuclear actions; and
- The Great Barrier Reef Marine Park.

Strategic assessments occur under Part 10 of the EPBC Act. They provide a mechanism to move away from site-by-site impact assessment and examine proposed developments at a landscape scale in relation to the requirements of the EPBC Act.

The Commonwealth Government Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) administers the strategic assessment provisions of the EPBC Act and provides advice to the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities throughout the process.



Figure 1: Location of the North West and South West Growth Centres

### 1.3 CURRENT STATUS OF THE STRATEGIC ASSESSMENT

The strategic assessment is being conducted in accordance with an agreement between the Commonwealth and NSW Governments (see Appendix A). The agreement sets out a framework for the assessment of the Program against the requirements of the EPBC Act and provides for:

- Detailed Terms of Reference (ToR) for the preparation of a Draft Strategic Assessment Report and Supplementary Report.
- Endorsement Criteria that must be met in order for the Commonwealth Government to endorse the Program.

The draft ToR were publicly exhibited from 17 November to 23 December 2009 and were finalised based on the outcomes of that process. The finalised ToR and Endorsement Criteria are available at Appendix A.

The Draft Strategic Assessment Report was developed to address the ToR and was publicly exhibited with the Draft Program Report from 24 May to 25 June 2010. Details of the public exhibition are available at Appendix B.

That report sought to examine the combined impacts of actions likely to result from the proposed developments outlined in the Program. It focused on the matters protected by the EPBC Act (i.e. matters of national environmental significance) and assessed:

- the matters of national environmental significance that occur within the vicinity of the Program area;
- potential impacts to those matters as a result of actions arising from the Program;
- the proposed mitigation, management and offset measures that the NSW Government will put in place to protect matters of national environmental significance; and
- the overall conservation outcomes that will be achieved through the implementation of the Program.

#### **1.4 PURPOSE OF THIS REPORT**

This report (the Supplementary Report) summarises and responds to the issues raised through the public comment process. 70 submissions from the public were made on the Draft Strategic Assessment Report and Draft Program Report. It also:

- addresses any additional issues raised by SEWPaC; and
- provides an analysis of the final Program and describes the outcomes for matters of national environmental significance.

In conjunction with preparing the Supplementary Report, the draft Program Report was also amended in response to issues raised in the public submissions and in response to the priorities of SEWPaC. The final program is summarised in Section 2 of this report.

For a complete understanding of the strategic assessment and its outcomes, the three key reports should be read in conjunction. These are:

1. The Draft Strategic Assessment Report.
2. The Supplementary Report (this report).
3. The final Program Report.

This Supplementary Report is structured as follows:

- *Section 1*: provides an introduction to the program and the issues addressed in this report.

- *Section 2*: summarises the final program as revised after the public exhibition period.
- *Section 3*: provides an overview of the submissions received on the Draft Strategic Assessment Report and the draft Program Report.
- *Section 4*: summarises and responds to the issues raised in the submissions and by SEWPaC.
- *Section 5*: provides a discussion of the issues relating to the protection of Cumberland Plain Woodland.
- *Section 6*: provides a consolidated analysis of the outcomes of the final program in relation to matters of national environmental significance.
- *Section 7*: outlines how the Draft Strategic Assessment Report and this report (the Supplementary Report) address the strategic assessment Terms of Reference and Endorsement Criteria.
- *Section 8*: provides a conclusion to the strategic assessment.

This report along with the Draft Strategic Assessment Report and final Program report will be provided to the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities for consideration in endorsing the Program.

It is important to note that the Draft Strategic Assessment Report and the Supplementary Report do not seek to address the requirements of NSW planning or environment legislation. Those requirements have been, and continue to be, addressed through separate processes at the State level.

## 1.5 ACTIONS AND CLASSES OF ACTIONS

The actions and classes of actions that have been assessed for EPBC Act approval in relation to the Program are described below. Endorsement of the Program and approval of the actions and classes of actions by the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities will remove the need for further assessment and approval under the EPBC Act for those actions and classes of actions.

The actions and classes of actions are:

- All actions associated with urban development, undertaken in accordance with the Program, within the North West and South West Growth Centres.

## 2. Program

As outlined in Section 1, the Sydney Growth Centres Program will provide for urban development and conservation including:

- residential, employment, open space, conservation and protected areas and related infrastructure within the North West and South West Growth Centres (illustrated in Figure 2 and Figure 5 respectively) over 30+ years; and
- a \$530 million (2005/06 dollars) biodiversity offsets package to protect high conservation value areas both *within and outside* the Growth Centres.

The Program is described in detail in the *Sydney Growth Centres Program Report* which is structured as follows:

- [Section 1](#) provides an introduction to the Program Report.
- [Section 2](#) provides a description of the Program.
- [Section 3](#) outlines the implementation of the Program. It includes: an overview of the legislation; a description of the relevant planning tools; and detail about the processes related to implementing the Program.
- [Section 4](#) provides the NSW commitments to conservation outcomes for the relevant matters of national environmental significance.
- [Section 5](#) provides a description of the monitoring, evaluation and reporting elements that will provide information on the progress of the program.

This section summarises the Program for the purposes of setting context for the assessment.

*In order to ensure consistency between this report and the Program Report, text is drawn directly from the Program Report. However, for full detail about the Program, reference should be made to the Program Report itself.*

### 2.1 GOVERNMENT DIRECTIONS AND POLICY CONTEXT

Based on the NSW Government projections, the population of Sydney is projected to grow by 1.7 million people to nearly 6 million by 2036, presenting significant challenges to governments to provide appropriate and affordable housing, infrastructure and services. Both the NSW and Commonwealth Governments have made public commitments supporting the streamlining of development processes in order to improve land and housing supply and affordability, while ensuring environmental outcomes.

In a move away from an ad hoc approach to greenfield housing development in Western Sydney, in June 2005 the NSW Government exhibited draft plans for *Managing Sydney's Growth Centres*. This exhibition included planning and infrastructure reports outlining the NSW Government's commitment to adopting a new approach to land releases by identifying the North West and South West Growth Centres in Western Sydney, to ensure that Sydney's growth occurs in a sustainable way with new infrastructure planned, funded and linked to the properly sequenced release of land.

In December 2005, the *Metropolitan Strategy: City of Cities* was released. The Metropolitan Strategy includes a range of actions and objectives supporting delivery of urban development within the Growth Centres. In particular, the Metropolitan Strategy identifies the importance of focusing greenfield development in the Growth Centres in order to protect other land of resource/agricultural and environmental significance and to provide for the efficient use of infrastructure including the North West and South West Rail Link, water, wastewater, road, education and health infrastructure. The Metropolitan Strategy aims to address Sydney's growing population by encouraging infill development (to meet 60-70% of the population growth needs) and well-planned greenfields development for the remainder.

Since then the NSW Government has commenced coordinated planning and infrastructure delivery in the Growth Centres, to facilitate the supply of new land to the market as quickly and efficiently as possible with the best use of Government resources. The Growth Centres will provide for 181,000 dwellings, at least 2,500 ha of land for employment and \$7.5 billion in regional infrastructure to support up to half a million additional residents over the next 30 years.

After several years of environmental studies and planning, public exhibition and the securing of a conservation fund, Biodiversity Certification has been granted over the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centres SEPP), allowing development in the Growth Centres to proceed without further NSW threatened species assessment on certified areas on the basis that agreed conservation outcomes are delivered. Through levies on development in the Growth Centres, \$530 million (in 2005-06 dollars) will be provided to purchase land for conservation within the Growth Centres and to obtain offsets outside the Growth Centres. The conservation levy applies to all developable land within the Growth Centres (excluding public services and utilities etc) resulting in the costs of conservation outcomes being equitably shared across the Growth Centres.

The Growth Centres Program represents a new approach to greenfield land release that aligns population growth with the development of housing, employment, infrastructure and services and the need for conservation. This approach is considered to derive strong environmental, social and economic outcomes, all of which are considerations in decision making relating to strategic assessments.

The outcomes of the EPBC Act strategic assessment of the Growth Centres are complementary with the Biodiversity Certification of the Growth Centres SEPP. The Program provides the mechanism to ensure the NSW Government's commitments in relation to the EPBC Act are clear and (as far as possible) consistent with the approach taken under the Biodiversity Certification.

## **2.2 PROGRAM ELEMENTS WITHIN THE GROWTH CENTRES**

Within the Growth Centres, the Program comprises of three broad elements:

- urban development (encompassing both residential and employment areas);
- protected areas; and
- infrastructure.

### **Urban development**

The combined area of the North West and South West Growth Centres will provide residential and employment areas for a population of around 500,000 people. This will include approximately 181,000 dwellings at a range of dwelling densities providing housing choice for the future residents of Western Sydney.

The Program includes plans for “walkable neighbourhoods” to provide unique and favourable access to retail, service and community centres, which will assist the development of strong, cohesive communities in an efficient and timely manner.

The key principles around urban development within the Growth Centres are:

- better public transport with frequent buses that link into the rail system;
- new urban areas connected with Sydney’s rail system via the existing Richmond line, the proposed South West Rail Link and proposed North West Rail Link;
- a range of housing types and densities to suit the needs of all members of the community;
- streets and suburbs planned so that residents can walk to shops for their daily needs;
- easy access to major town centres with a full range of shops, recreational facilities and services along with smaller village centres and neighbourhood shops;
- environmentally friendly homes that conform to BASIX (the NSW Government’s Building Sustainability Index) requirements for water and energy savings;
- jobs available locally and within the region, reducing the demand for transport services into Sydney’s CBD and cutting travel times;
- a range of land uses to provide the right mix of houses, jobs, services, open and recreational spaces; and
- protection of natural and cultural heritage values, waterways and conservation of biodiversity.

### Protected areas

Both the North West and South West Growth Centres contain areas of important biodiversity value. As many areas within the Growth Centres are degraded and fragmented, the Program provides for the protection of the areas of highest conservation value in the Growth Centres.

In total within the Growth Centres, the Program will retain and protect a minimum of 2,000 ha of existing native vegetation, including vegetation within the 1,000 ha of zoned conservation areas (described in detail in Section 3 of the Program Report) to be acquired by the NSW Government.

### Infrastructure

Both the North West and South West Growth Centres will require significant investment in the upgrade and construction of infrastructure, including roads, rail, education, health, emergency and justice services. The NSW Government will provide a substantial funding contribution to ensure that infrastructure is provided efficiently and coordinated with urban development.

Key elements of the infrastructure component of the Program are:

- Transport: upgrade and construction of new regional and local roads, rail and bus networks to provide efficient transport links.
- Health: improvements to existing hospitals and the construction of new community and health centres.
- Education: development of primary schools, high schools and TAFE facilities to service the new communities.
- Emergency services: provision of police, ambulance and fire stations as communities grow.

- Water, sewerage, and recycled water: integration of water and sewerage schemes.
- Local facilities: provision of local parks, community centres, libraries and sports fields.

### **2.2.1 THE NORTH WEST GROWTH CENTRE**

The North West Growth Centre is approximately 10,000 ha in size and is located within the boundaries of Blacktown, Hawkesbury and Hills Shire local government areas. The Growth Centre is adjacent to Rouse Hill Major Centre and is serviced by the existing Richmond rail line that has three stations within the Growth Centre. The boundaries of the North West Growth Centre are shown in Figure 2.

The North West Growth Centre is made up of 16 precincts and has an estimated dwelling yield of 70,000 dwellings.

The development of these precincts will be generally in accordance with the North West Structure Plan (see Figure 3) which guides the location of town centres, neighbourhood centres, industrial and conservation lands.

The land identified as being capable of urban development excludes those areas identified as having high biodiversity significance or offering an opportunity to protect and maintain existing vegetation. These areas and significant riparian corridors such as South Creek, Eastern Creek and Cattai Creek have been protected through the vegetation clearing development controls under the Growth Centres SEPP.

There will be a string of transit-oriented towns located on either side of the existing Richmond rail line, and Rouse Hill Major centre will provide regional and higher order services for the North West Growth Centre.

The eastern part of the North West Growth Centre includes North Kellyville and Box Hill. The North West Transitway along Windsor Rd will provide the key public transport service connecting the Growth Centre with Parramatta and Blacktown. The North West Rail Link will connect Rouse Hill to Epping and the Sydney CBD. It will serve the future development within the North West Growth Centre and will include stabling facilities to the west of Rouse Hill within the North West Growth Centre.

The central part of the Growth Centre is focused on the Richmond rail line. Opportunities for new development have been identified in Vineyard, Riverstone, and Schofields to the south. These centres and urban areas will take advantage of the existing transport links and its central location in the Growth Centre.

The western part of Marsden Park provides for a town centre near Richmond Road and an employment and industrial area.

The Growth Centre has been divided into local areas which are large enough to accommodate a critical mass of population and development, and which will facilitate the provision of public transport.

A town centre providing a mix of services and facilities is identified for each of the local areas. The size of each centre will depend on the size of its local area, being its primary retail catchment.

There are also several areas of employment-related or industrial land identified for larger-scale enterprises. These areas are distributed to ensure that each part of the Growth Centre has a local service industry area. They also have good access to major roads, and are generally able to be separated from other activities. This is essential to ensure a range of employment opportunities are provided for the future population.





### NORTH WEST GROWTH CENTRE STRUCTURE PLAN (EDITION 3)

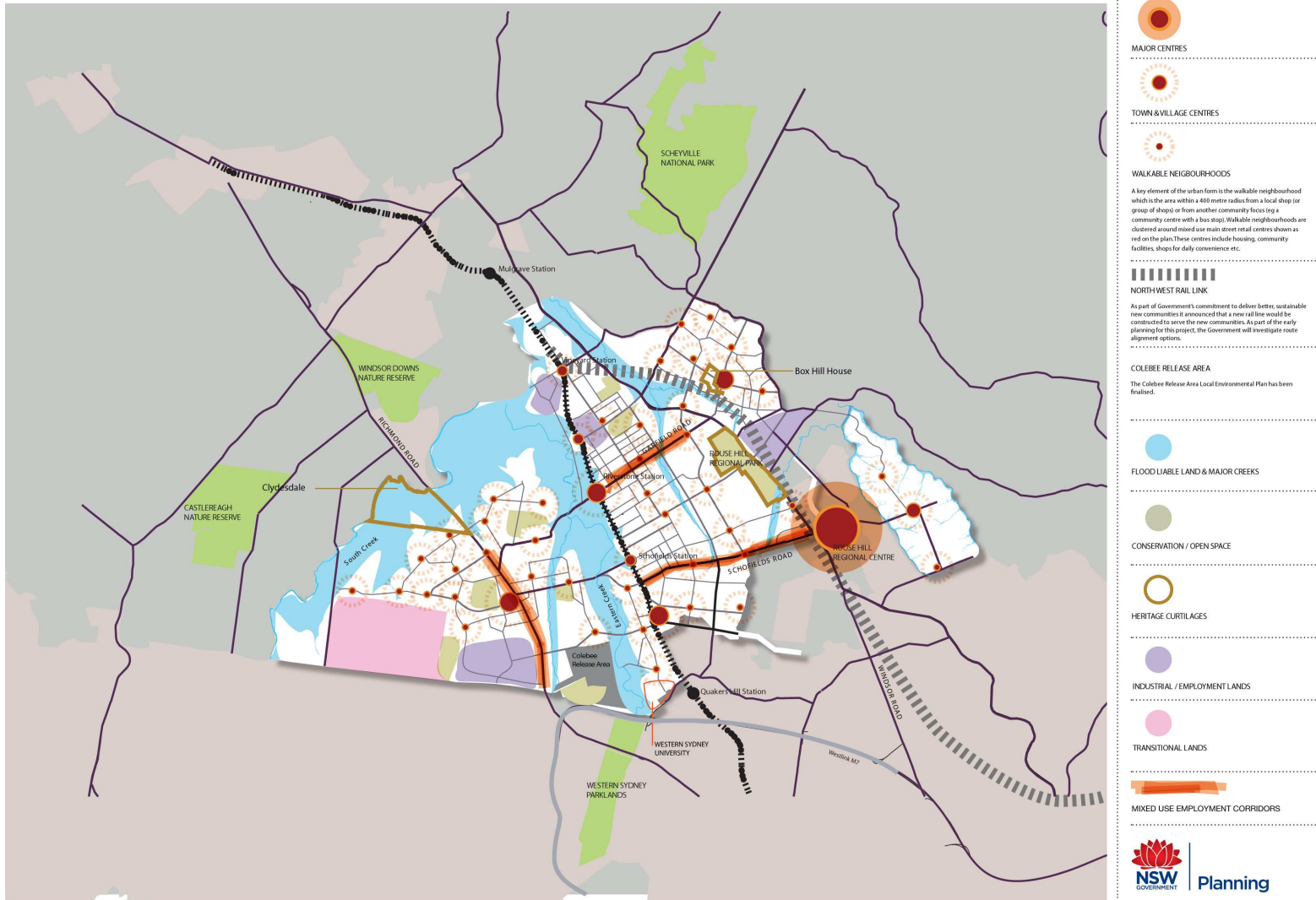


Figure 3: North West Structure Plan

## Urban development and protected areas

The indicative layout for the North West Growth Centre showing development and protected lands is shown in Figure 4. These boundaries are indicative as boundary changes may occur during the more detailed planning processes.

*Note: Reference should be made to the NSW Legislation website at [www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au) for the most current zoning and development control maps. The development control plans (DCPs) can be accessed from the Department of Planning Growth Centres website at [www.growthcentres.nsw.gov.au](http://www.growthcentres.nsw.gov.au).*

The development areas provide for residential and employment lands and related infrastructure, but will also include areas of open space.

The protected areas under the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centres SEPP) comprise:

- Flood prone lands - Vegetation on these lands is protected through the vegetation clearing development controls in the Growth Centres SEPP. Limited development may occur in these areas, however any loss of vegetation is required to be offset, in accordance with the Growth Centres Biodiversity Certification.
- Conservation areas that have been rezoned through the SEPP. These areas will be brought into public ownership overtime and be managed for conservation or recreation. Development in these areas is restricted and native vegetation on these lands is to be retained and protected. The areas include:
  - Environmental conservation areas which have the main objective of protecting and restoring areas with ecological, scientific or aesthetic value.
  - Public recreation - regional areas which have the joint objectives of protecting natural and heritage values of the land, as well as allowing sympathetic recreational uses.

There are also a range of existing protected areas within the North West Growth Centre that provide for the protection of native vegetation. These are shown on Figure 4.

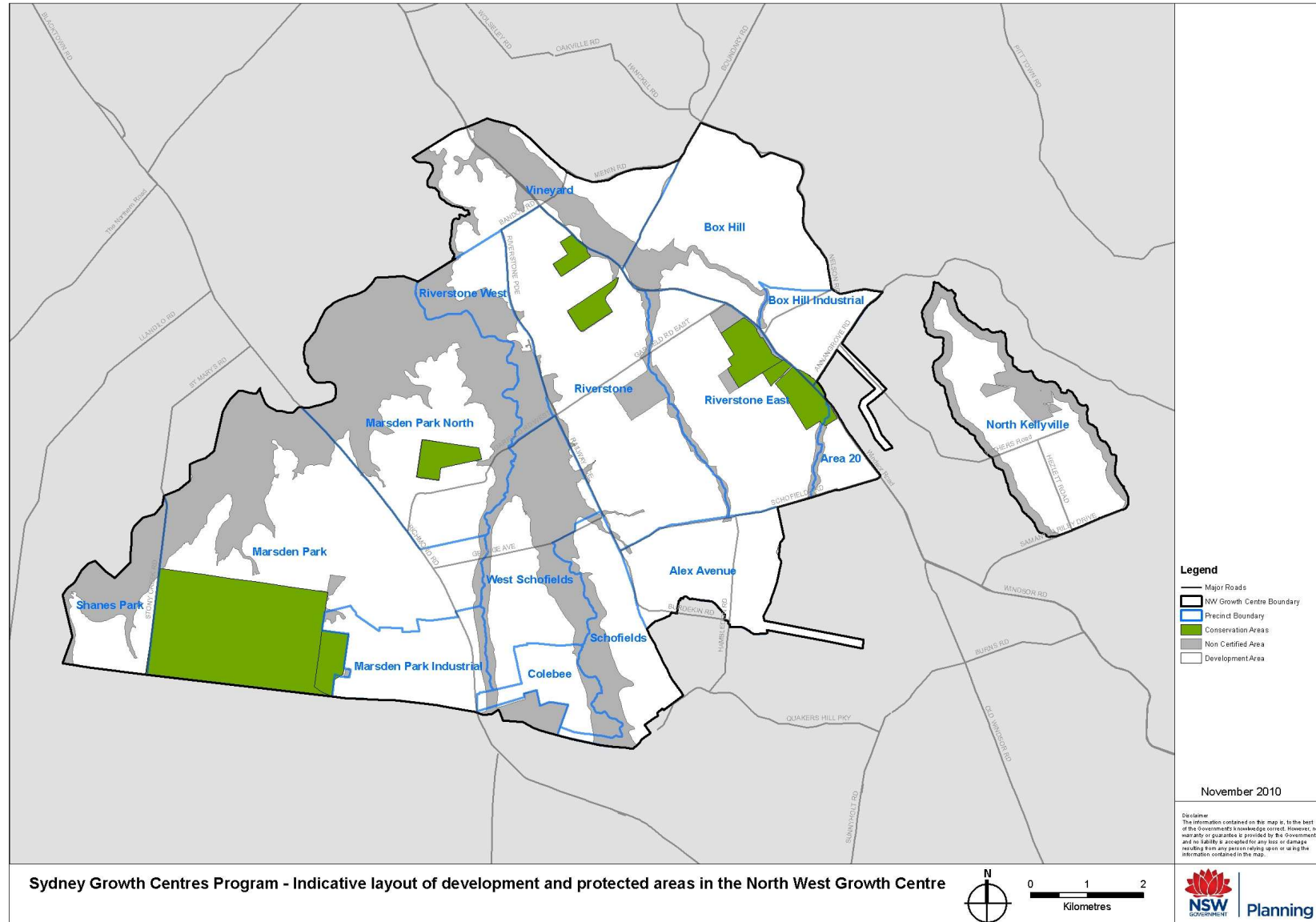


Figure 4: Indicative layout of development and protected areas within the North West Growth Centre

### 2.2.2 THE SOUTH WEST GROWTH CENTRE

The South West Growth Centre is within the boundaries of Camden, Campbelltown and Liverpool local government areas. It is approximately 17,000 ha in size, will focus on the Major Centre of Leppington, and the South West Rail Link will provide key public transport service connecting the Growth Centre and Sydney. The boundaries of the South West Growth Centre are shown in Figure 5.

The South West Growth Centre is made up of 18 precincts and has an estimated dwelling capacity of 110,000 dwellings.

The development of these precincts will be generally in accordance with the South West Structure Plan (see Figure 6) which guides the location of town centres, neighbourhood centres, industrial and conservation lands.

The land identified as being capable of urban development excludes those areas identified as having high biodiversity significance or offering an opportunity to strengthen existing vegetation. These areas and significant riparian corridors such as South Creek and Kemps Creek have been protected through the vegetation clearing development controls under the Growth Centres SEPP.

The proposed major centre of Leppington will be located within the Leppington North Precinct and will be serviced by the South West Rail Link with new railway stations to be constructed at Leppington and Edmondson Park. Ultimately, Leppington will provide for more than 8,000 new jobs and land for higher order retail, civic and commercial uses which will support the population of the South West Growth Centre.

The Growth Centre has been divided into local areas which are large enough to accommodate a critical mass of population and development, and which will be structured to facilitate the provision of public transport.

A town centre providing a mix of services and facilities is identified for each of the local areas. The size of each centre will depend on the size of its local area, which is its primary retail catchment.

There are also several areas of employment and industrial land identified for larger-scale enterprises and those with heavy truck use. These areas are distributed to ensure that each part of the Growth Centre has a local service industry area. They also have good access to major roads, and are generally able to be separated from other activities.

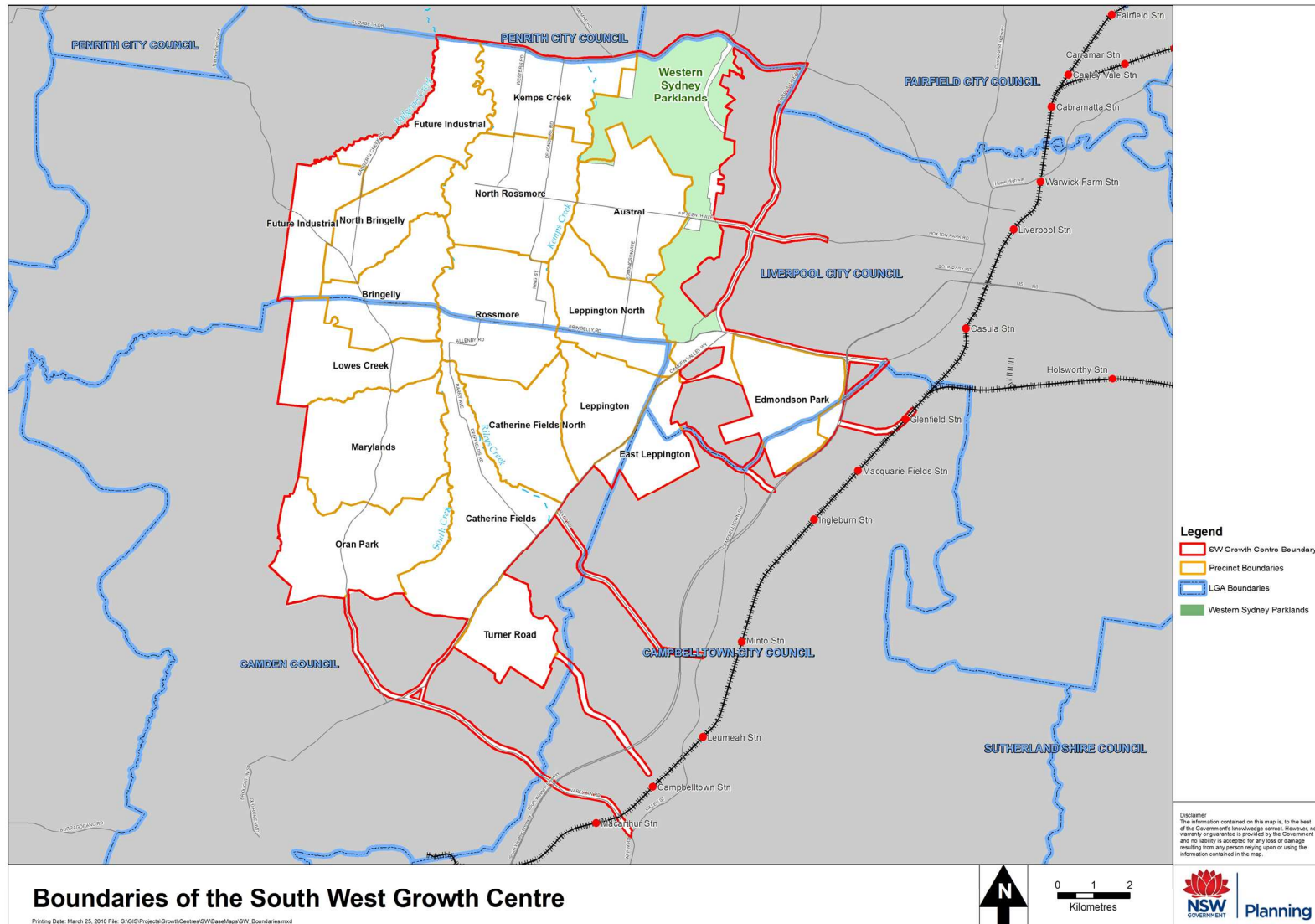


Figure 5: Boundaries of the South West Growth Centre

### SOUTH WEST GROWTH CENTRE STRUCTURE PLAN (EDITION 3)

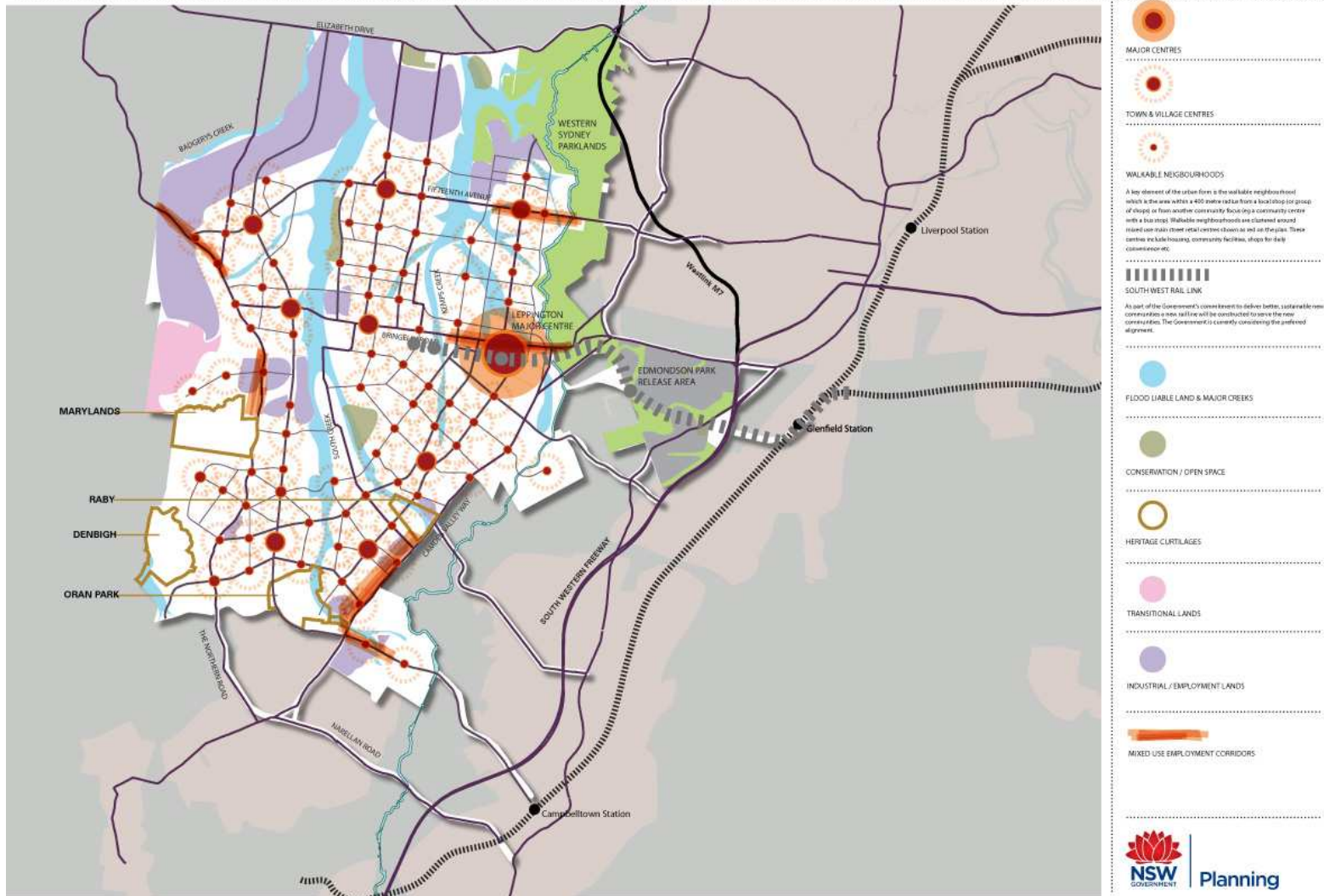


Figure 6: South West Growth Centre Structure Plan

### Urban development and protected areas

The indicative layout for the South West Growth Centre showing development and protected lands is shown in Figure 7. Details of each of these protected areas are included in Section 3 of the Program Report. These boundaries are indicative as boundary changes may occur following detailed planning processes. This has already occurred as part of the detailed planning for the Edmondson Park, Oran Park and Turner Road Precincts.

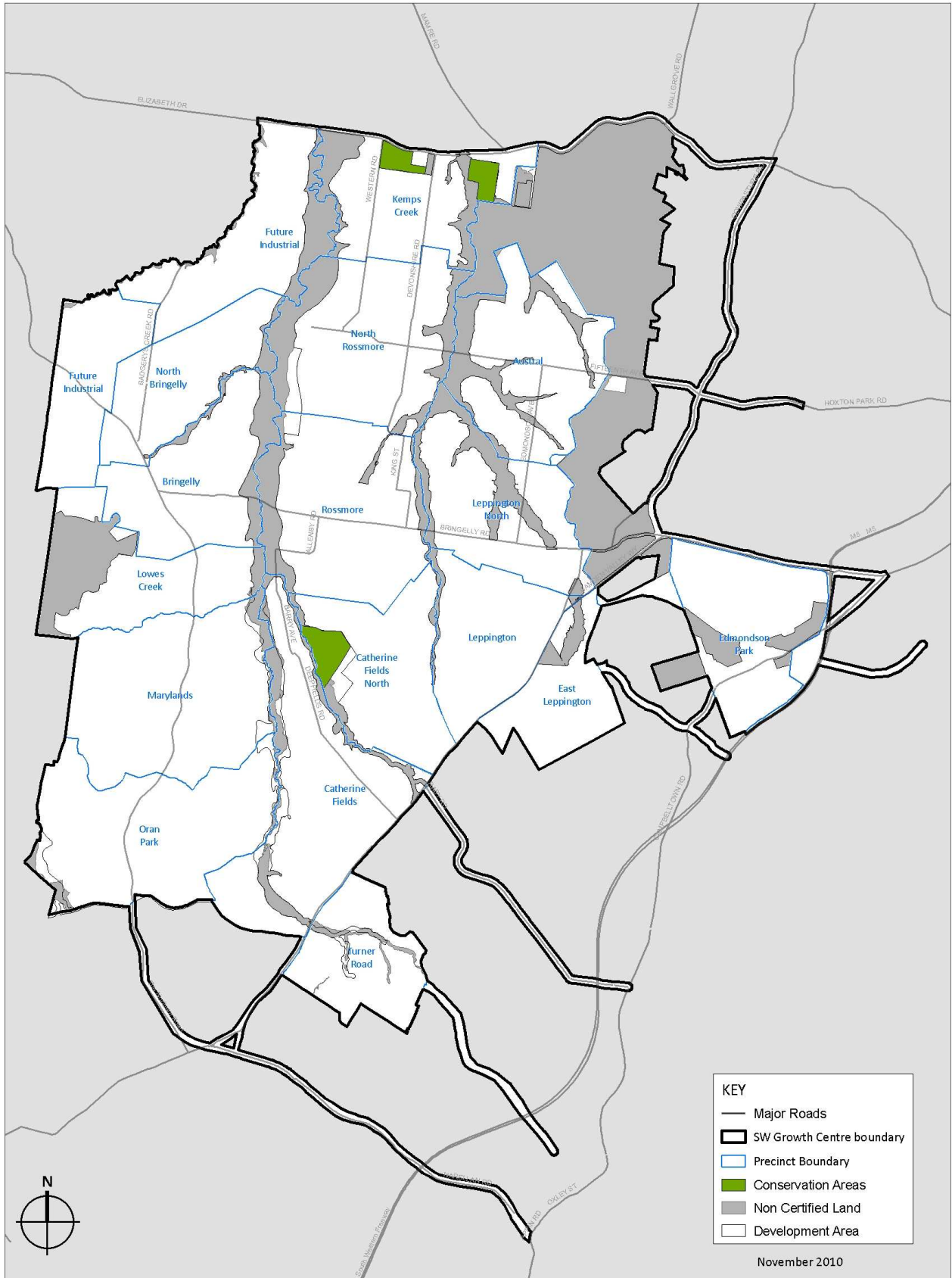
*Note: Reference should be made to the NSW Legislation website at [www.legislation.nsw.gov.au](http://www.legislation.nsw.gov.au) for the most current zoning and development control maps. The development control plans (DCPs) can be accessed from the Department of Planning Growth Centres website at [www.growthcentres.nsw.gov.au](http://www.growthcentres.nsw.gov.au).*

The development areas provide for residential and employment lands and related infrastructure, but will also include areas of open space.

The protected areas under the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centres SEPP) comprise:

- Flood prone lands. Vegetation on these lands is protected through the vegetation clearing development controls in the Growth Centres SEPP. Limited development may occur in these areas, however any loss of vegetation is required to be offset, in accordance with the Growth Centres Biodiversity Certification.
- Conservation areas zoned Public recreation – regional. This applies to three areas within the South West. These areas will be brought into public ownership overtime and be managed for conservation and recreation purposes. They have the joint objectives of protecting natural and heritage values of the land, as well as allowing sympathetic recreational uses. Development in these areas is limited and native vegetation on these lands is to be retained and protected.

There are also a range of existing protected areas within the South West Growth Centre that provide for the protection of native vegetation. These are shown on Figure 7.



**Sydney Growth Centres Program - Indicative layout of development and protected areas in the South West Growth Centre**

**Figure 7:** Indicative layout of development and protected areas within the South West Growth Centre



## 2.3 BIODIVERSITY OFFSET PROGRAM

The Program provides for a \$530 million biodiversity offsets package to protect high conservation value areas both *within and outside* the Growth Centres. 25% of this money will be used to secure conservation areas within the Growth Centres and 75% will be used to secure high quality vegetation remnants with similar ecological values outside the Growth Centres.

In addition to the \$530 million, some of the conservation areas within the North West Growth Centre are being purchased using other NSW Government revenue and by the local council.

### 2.3.1 CONSERVATION AREAS WITHIN THE GROWTH CENTRES

The conservation areas to be purchased within the Growth Centres are shown in Figure 4 and Figure 7. These areas cover a minimum of 1,000 ha and represent the highest quality vegetation within the Growth Centres.

There are a range of processes to acquire the land (detailed in Section 3 of the Program Report) and all areas are protected from vegetation clearing through development controls and will be managed in the long term for conservation.

In addition to these areas there are lands within the Growth Centres that are currently in public ownership or have been identified for acquisition. These areas include areas such as Rossmore Grange, Kemps Creek Nature Reserve, and the Western Sydney Parklands. These areas are in public ownership and are managed by NSW Government or local councils to meet conservation and recreation objectives.

### 2.3.2 CONSERVATION AREAS OUTSIDE OF THE GROWTH CENTRES

The Program provides for the establishment of additional conservation areas throughout the Cumberland Plain, the Hawkesbury Nepean Catchment and the Sydney Basin Bioregion (see Figure 8). The Program will provide 75% of the overall Conservation Fund (\$397.5 million in 2005/06 dollars) over 30+ years for the securing of offset lands of high conservation and similar ecological values within these areas. This will be delivered through the Growth Centres Offset Program.

As a first preference, the funds will be invested within the priority areas on the Cumberland Plain identified in the *Hawkesbury Nepean Catchment Action Plan 2007-2016* (2008). The priority areas within the Cumberland Plain were identified by DECCW as lands that could most effectively be managed for threatened biodiversity. They represent the best remaining opportunities in the region to maximise long term biodiversity benefits for the lowest possible cost, including the least likelihood of restricting land supply. DECCW considers the remnant vegetation within these lands to be the highest priority for future recovery efforts for the threatened biodiversity of the Cumberland Plain.

Criteria for guiding the spending of annual funding within this area include a consideration of reserve design principles, conservation values and cost effectiveness. Preference will be given to protecting the largest remnants of intact vegetation with the greatest potential for long-term retention of biodiversity values.

If no suitable, cost effective lands are available in the areas of first preference, then priority areas within the broader Hawkesbury Nepean catchment will be considered as a second preference. These areas were identified as part of the development of the Hawkesbury Nepean Catchment Action Plan and comprise a network of regional corridors and priority fauna habitats in the catchment.

Finally, as third and fourth preferences, funding can be spent to conserve grassy woodlands within the Hawkesbury Nepean Catchment and then the Sydney Basin respectively. Grassy woodlands are a

broad group of vegetation types, including Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest, which are under-represented in the State's reserve system.

In summary, funding will be allocated within a cascading series of preferential areas as follows:

- priority areas within the Cumberland Plain, as identified in the Hawkesbury Nepean Catchment Action Plan; then
- priority areas within the Hawkesbury Nepean catchment, as identified in the Hawkesbury Nepean Catchment Action Plan; then
- grassy woodlands within the Hawkesbury Nepean catchment; and then
- grassy woodlands within the Sydney Basin.

In relation to offsets for matters of national environmental significance outside the Growth Centres, the Program will allocate \$278.25 million (as part of the \$397.5 million) towards securing conservation outcomes for matters protected under the EPBC Act. It should be noted that this commitment is complementary with the objectives to provide offsets for the broader biodiversity values that are protected under NSW legislation.



**Figure 8:** Schematic of the offset focus areas

## 2.4 SUMMARY OF PROGRAM COMMITMENTS FOR MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

Under the Program, the NSW Government commits to deliver conservation outcomes for a range of matters of national environmental significance that are relevant to the Growth Centres. Reference should be made to the Program Report in order to understand the full details of these commitments.

However, in summary, through implementation of the Program the NSW Government will ensure that:

- A minimum of 998 ha of *Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest* (CPW) will be retained and protected within the Growth Centres, including a minimum of 363 ha of high management viability (HMV) CPW.
- At least 2,400 ha of either CPW or other grassy woodland communities which are similar to CPW in floristic structure will be protected outside of the Growth Centres (preference will be given to CPW followed by *White Box*, *Yellow Box*, *Blakely's Red Gum Grassy Woodland and Derived Native Grassland*). As part of this commitment at least 205 ha of additional HMV CPW will be protected outside of the Growth Centres (see section 5.2.1).
- A minimum of 58 ha of Shale Sandstone Transition Forest will be retained and protected within the Growth Centre, and at least 132 ha will be protected outside of the Growth Centres.
- At least 4.4 ha of Turpentine Ironbark Forest will be protected outside of the Growth Centres.
- Offsets for other matters of national environmental significance will be obtained through the expenditure of the Growth Centres Conservation Fund.

### 3. Summary of submissions

Seventy (70) public submissions were received on the Draft Strategic Assessment Report and the draft Program Report. These submissions were made by a mixture of:

- conservation groups;
- Councils;
- industry groups;
- private property owners;
- State agencies;
- urban developers; and
- a cross section of other members of the public.

All submissions received through the public consultation process have been provided to SEWPaC and the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities. They are listed and summarised at Appendix C to this report.

The table below summarises the general views expressed in the submissions.

General views	Number of submissions
<b>Supportive</b> of the Growth Centres and the strategic assessment	7
<b>Opposed</b> to the Growth Centres and/or the strategic assessment:	
<ul style="list-style-type: none"> <li>• Pro-forma submissions stating opposition in relation to impacts on biodiversity</li> </ul>	27
<ul style="list-style-type: none"> <li>• Detailed submissions stating opposition for reasons ranging from concern about impacts to biodiversity, impacts to agriculture, and potential restrictions to development both within and outside the Growth Centres</li> </ul>	32
<b>Other</b>	4
<b>Total</b>	<b>70</b>

#### 3.1 SUPPORT FOR THE PROGRAM

The seven submissions that indicated clear support for the program outlined four key areas of support:

- The strategic assessment approach.
- Benefits compared to individual site-by-site assessments.
- Conservation of native vegetation.
- Cascading preference system for offsets.

### 3.1.1 THE STRATEGIC ASSESSMENT APPROACH

A number of submissions indicated support for the strategic assessment approach that is being undertaken for the Growth Centres Program.

Support was provided for a strategic approach to urban development that allows a balance to be achieved between environmental, social and economic needs. In particular, submissions were supportive of a balance between conservation and urban development. These submissions saw the Growth Centres Program as an appropriate way to address biodiversity values and environmental matters within the Growth Centres, and supported a strategic approach that maximises the conservation of native vegetation and local biodiversity in situ.

A number of comments also supported the view that a strategic approach can provide an improved outcome for biodiversity at the landscape scale.

### 3.1.2 BENEFITS COMPARED TO INDIVIDUAL SITE-BY-SITE ASSESSMENTS

A number of submissions referred to the benefits of a strategic assessment approach compared to the alternative site-by-site assessment of individual developments that would otherwise be required.

Comments indicated support for a streamlining of the assessment of development applications where there is adequate protection of biodiversity. The strategic assessment approach was seen to have significant advantages over ad hoc referral and assessment under the EPBC Act, including:

- Promotion of the principles of ecologically sustainable development.
- Ability to consider matters of national environmental significance (MNES) early in the planning process.
- Capacity to achieve significant and real conservation outcomes.
- Capacity to address cumulative impacts at the landscape scale.
- Removes the need to assess and address conservation issues on an individual site by site basis.

A number of submissions supported a streamlined assessment process that allowed development to proceed without the need for numerous assessment and approval processes. Support was indicated for an approach that removes the need for separate approvals under both NSW and Commonwealth legislation. Such an approach was also recognised for preventing the need for offsets to be required twice for the same action (once under NSW legislation and again under the EPBC Act).

From a development perspective, the benefits of streamlining the process as proposed in the strategic assessment include:

- Certainty for land use.
- Reduction in the cost to government and industry by not having to undertake site by site assessments.
- Provision of affordable housing through a reduction in development costs, and an increase in the supply (and rate of supply) of housing.

### 3.1.3 CONSERVATION OF NATIVE VEGETATION

It was noted in several submissions that that the Growth Centres Program facilitates the development of the Growth Centres in an environmentally and economically sustainable way. Comments were received in support of the retention and conservation of native vegetation within the Growth Centres

and through the offsets program. The approach taken in the Program was seen to provide a balance between identifying and conserving the highest quality remnants within the Growth Centres and providing for effective offsets for lost biodiversity outside of the Growth Centres. Comments indicated that significant environmental values will be retained within the Growth Centres.

Comments indicated that the Growth Centres Program provides greater security of environmental outcomes, and particular mention was made of the recent purchase of the 181 ha Cranebrook site, with the intention that it will become a new reserve and will be secured for long term conservation. There was also support for the proposed public ownership model for the long term protection of land containing threatened species and ecological communities.

#### **3.1.4 CASCADING PREFERENCE SYSTEM FOR OFFSETS**

A number of submissions stated that the cascading preference system that is proposed to continue for the allocation of the conservation fund is an effective method to allocate funds in a way that will achieve long term biodiversity conservation. It was noted that this system supports the Hawkesbury – Nepean Catchment Action Plan.

### **3.2 KEY ISSUES**

While there were a number of submissions demonstrating support for the Growth Centres Program and Strategic Assessment process, the majority of submissions provided some level of qualified opposition. This opposition related to a range of concerns and issues which can be categorised as follows:

1. Adequacy of conservation within the Growth Centres.
2. Adequacy of offsets.
3. Adequacy of assessment methods.
4. Impacts on development potential.

In addition to the issues raised by the public, the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC) has also been consulted throughout the assessment process and has raised a number of matters that require further assessment.

Each of these key issues (including a range of sub-issues) are summarised and addressed in Section 4.

## 4. Key issues

The following section provides a summary of each of the key issues raised through the public consultation process.

While every effort has been made to represent the issues and concerns expressed in the submissions accurately, they are not presented here verbatim. This was necessary for confidentiality reasons and so that responses could be provided with clarity.

Issues raised through the public submissions that do not relate to the Strategic Assessment are not discussed here. Only those with relevance to the strategic assessment process under the EPBC Act are included.

### 4.1 ADEQUACY OF CONSERVATION WITHIN THE GROWTH CENTRES

#### 4.1.1 PROTECTION FOR SPECIES AND ECOLOGICAL COMMUNITIES

##### Summary of comments

A number of public submissions raised concerns over the level of protection provided for listed threatened species and ecological communities within the Growth Centres. The majority of submissions focused on the potential impacts to ecological communities and threatened flora with little mention of potential impacts to threatened fauna.

These comments can be summarised as follows:

- The extent of clearing of ecological communities and threatened species habitat was seen to be too high. Some submissions argued that the reported loss puts the persistence of communities listed as endangered and critically endangered at risk, particularly in the perceived absence of any clear commitment to “true” like-for-like offset targets.
- Suggestion that there is a lack of representative protection to conserve the full biodiversity of listed communities within the Growth Centres. There was concern over the loss of smaller remnants which may support rare and threatened flora and which are potentially important in a local context.
- Concerns that adequate measures to first avoid, then mitigate impacts to listed communities and threatened species were not demonstrated before offsets were used to compensate for these impacts.
- Suggestion that the protected network within the Growth Centres needs to conserve corridors of listed communities or ‘stepping stones’ of protected areas to provide better connectivity in the landscape.
- Concern over the level of uncertainty which exists in relation to a number of the proposed conservation outcomes. For instance, the outcomes for a number of the Relevant Biodiversity Measures are not defined, and are instead provided through words such as “...protect to the satisfaction of DECCW...”.
- A view that the Program should address impacts to those ecological communities currently nominated for listing under the TSC Act and the EPBC Act and which are being considered by the Commonwealth Threatened Species Scientific Committee and the NSW Scientific Committee.



## Response

The key matters of national environmental significance that are relevant to the Program are:

- three ecological communities, including 'Cumberland Plain Shale Woodland and Shale Gravel Transition Forest (CPW)', 'Shale-Sandstone Transition Forest' and 'Turpentine Ironbark Forest';
- eleven threatened flora species, including *Acacia pubescens*, *Allocasuarina glareicola*, *Darwinia biflora*, *Dillwynia tenuifolia*, *Grevillea parviflora* subsp. *parviflora*, *Micromyrtus minutiflora*, *Persoonia hirsuta*, *Persoonia nutans*, *Pimelea spicata*, *Pterostylis saxicola* and *Pultenaea parviflora*; and
- four threatened fauna species, including the Swift Parrot, Green and Golden Bell Frog, Large-eared Pied Bat and Grey-headed Flying-fox.

### **Outcomes for species and ecological communities**

The Growth Centres Program has been developed to reconcile both planning and conservation objectives. Within this context, a range of impacts on the environment are unavoidable in planning for and accommodating Sydney's projected population growth over the next 30 years. For this reason, environmental planning within the Growth Centres has focused on the retention and protection of areas with the highest biodiversity and the best long-term prospects for management and viability. Impacts from development within the Growth Centres have therefore been concentrated, wherever possible, in the more degraded and disconnected areas which have long-term management limitations.

The principles guiding this approach to priority conservation planning are well established. Specifically, the principle that the protection and management of larger, intact remnants is more effective and efficient than for smaller, fragmented remnants; and the principle that active management to best practice standards is needed to prevent the degradation of bushland in a fragmented landscape (DECCW, 2009). These principles are particularly relevant within the context of the following constraints to effective implementation of recovery efforts on the Cumberland Plain:

- resources and funding are significant, but not unlimited, while land values are high;
- the landscape is highly fragmented and many bushland remnants are degraded;
- active management is limited which means many remnants continue to be degraded through weed invasion, inappropriate use and other 'edge effects'; and
- much of the remaining bushland occurs on privately owned land.

It is recognised that there is an alternative conservation planning model which direct recovery efforts to incorporate smaller remnants with broader biodiversity values and create networks of connected protected areas. While this model is useful in other contexts, priority conservation planning is more applicable and achievable in the context of competing land uses, high land costs and limited resources and funding. In addition, while connectivity is recognised as an important principle in much of conservation planning, its relevance on the Cumberland Plain is diminished; many animal species on the Cumberland Plain have been severely depleted due to the extent of clearing and fragmentation of vegetation (DECCW 2009b). Many mammal species declined to extinction in the decades after settlement and bird species diversity collapsed across most of Western Sydney in the 1970s. For this reason, the preservation of connectivity across the Cumberland Plain is less relevant than in other parts of Australia.

As such, impacts to the areas of highest viability were avoided wherever possible within the Growth Centres, with around 90% of the EPBC listed threatened ecological communities determined to have 'High Management Viability' (HMV) being retained and protected. In summary, the Program provides the following outcomes for matters of national environmental significance which include outcomes both within and outside of the Growth Centres:

- Retention and protection of a minimum of 998 ha of CPW within the Growth Centres, including a minimum of 363 ha of HMV CPW.
- Protection of at least 2,400 ha of either CPW or other grassy woodland communities which are similar to CPW in floristic structure outside of the Growth Centres (preference will be given to CPW followed by *White Box*, *Yellow Box*, *Blakely's Red Gum Grassy Woodland and Derived Native Grassland*). As part of this commitment at least 205 ha of additional HMV CPW will be protected outside of the Growth Centres (see section 5.2.1).
- Retention and protection of a minimum of 58 ha of Shale Sandstone Transition Forest within the Growth Centres.
- Protection of at least 132 ha of Shale Sandstone Transition Forest outside of the Growth Centres.
- Protection of at least 4.4 ha of Turpentine Ironbark Forest outside of the Growth Centres.
- A range of mechanisms to provide outcomes for relevant threatened flora and fauna both within and outside of the Growth Centres.

In relation to offsets for matters of national environmental significance outside the Growth Centres, the Program will allocate \$278.25 million (as part of the \$397.5 million for offsets outside of the Growth Centres) towards securing conservation outcomes for matters protected under the EPBC Act. As outlined above, this funding will be allocated in accordance with the framework established by the Biodiversity Certification.

These measures are considered to provide the best opportunity for good long term conservation outcomes for matters of national environmental significance. Importantly, the approaches applied to develop the Program and the outcomes to be achieved are consistent with the Draft Cumberland Plain Recovery Plan (DECCW 2009).

#### ***Certainty of conservation outcomes***

A number of the Relevant Biodiversity Measures (RBMs) provide a process for delivering outcomes for threatened species (in particular) that are subject to a number of different scenarios. For example, several areas in the Growth Centres must be surveyed to determine the presence of *Acacia pubescens*. If this species is found to be present, an area of suitable habitat must be protected "to the satisfaction of DECCW" (RBM 17).

This approach is applied to a number of other species and is considered to be appropriate. Definitive outcomes cannot be defined without first understanding the relative values of an area for these species taking into account the total local population (i.e. through the survey results and assessment of all available data). Once defined, DECCW is then in the best position to determine the size and location of the habitat to be protected for each of the species.

Reporting on the implementation of the RBMs and Program commitments will provide an ongoing mechanism to understand the outcomes provided by applying this approach.

### **Threatened species and ecological community nominations**

In relation to species and ecological communities nominated for listing under the TSC Act, RBMs 36 and 37 specifically outline the approach that the NSW Government will take to consider these issues. RBM 36 requires that where a preliminary determination to list additional species, populations or ecological communities that may occur in the Growth Centres is made under the TSC Act, DoP must provide advice to DECCW on whether:

- the species, population or ecological community is known or likely to be present in the Growth Centres;
- it was considered during the preparation of the draft Growth Centres Conservation Plan; and
- whether the SEPP, and related measures, provides adequate protection for the species, population or ecological community.

Based on the information provided by DoP (and any other relevant information), DECCW in accordance with RBM 37 will advise the NSW Minister for the Environment 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.

This process is also expected to address species and ecological communities nominated for listing under the EPBC Act due to the high degree of overlap between the two listings.

#### **4.1.2 ANALYSIS OF POTENTIAL IMPACTS TO ADDITIONAL FLORA SPECIES**

Following completion of the Draft Strategic Assessment Report, two additional EPBC Act listed threatened flora species were identified as potentially occurring within the vicinity of the area affected by the Program. The species are *Allocasuarina glareicola* and *Pterostylis saxicola*. A risk assessment for these two species consistent with that undertaken for all species at section 3.2.2 of the Draft Strategic Assessment Report is provided below.

It should be noted that:

- there are no NSW Atlas records for either species within the Growth Centres; and
- the EPBC Act Environmental Reporting Tool did not identify either species as potentially being present within the area affected by the Program at the time of the assessment.

#### **Allocasuarina glareicola**

##### **Species Description**

*Allocasuarina glareicola* is a smooth barked, small shrub that grows to 1-2 m high and is listed as endangered under the EPBC Act and the NSW TSC Act.

Most of the known populations are restricted to the North-West Cumberland Plain. However, one population is known to exist in the Holsworthy Military Area at Voyager Point, Liverpool (TSSC, 2008). The total estimated range of the species is 36 km<sup>2</sup> (SEWPaC, 2010a).

*A. glareicola* is predominantly found on alluvial gravels, lateritic or yellow clay soils within Castlereagh open woodland. This habitat type is characterised by open eucalypt woodland where the over-story is dominated by species such as *Eucalyptus parramattensis*, *Eucalyptus fibrosa*, *Angophora bakeri* and *Eucalyptus sclerophylla* (DECC, 2005a). *A. glareicola* is also often found in association with *Dillwynia tenuifolia*.

Reproduction of *A. glareicola* is often by vegetative dispersal through sucker roots to a maximum of 3 m from the parent plant. As such, clone populations often establish which may mean that even though a patch may contain more than 100 stems, only one genetic individual may actually be represented. The species is currently represented by 457 known groups, of which each may represent only one individual (SEWPaC, 2010a).

The major threats to *A. glareicola* include clearing, weed invasion, unrestricted access and a fire regime that is too frequent (TSSC, 2008a).

#### ***Allocasuarina glareicola* within the Growth Centres**

There are no known populations of *A. glareicola* within the Growth Centres. However, there are several NSW Wildlife Atlas records within areas of Castlereagh woodland west of the North West Growth Centre (see Figure 9).

Within the Growth Centres, there are several areas of potential habitat for this species which are associated with the presence of Castlereagh Woodland and known populations of *Dillwynia tenuifolia*. The North West Growth Centre contains several patches of Castlereagh Woodland, the largest of which occurs within the Air Services Australia Site at Shanes Park and the environmental conservation area in Marsden Park North Precinct (both areas support known populations of *D. tenuifolia*). The South West Growth Centre contains an isolated patch of Castlereagh woodland within the Public Recreation - Regional zone within the Kemps Creek Precinct (this area also supports known records of *D. tenuifolia*).

These three key areas within the Growth Centres identified as potentially supporting habitat for *A. glareicola* have all been subject to a reasonable level of survey effort due to their designation for environment conservation. For this reason, the lack of known records is considered to be a good indication that the species is unlikely to occur there and suggests that the Growth Centres does not provide any important areas for *A. glareicola*.

#### **Potential impacts to *Allocasuarina glareicola* as a result of development within the Growth Centres**

There are no known records of *A. glareicola* within the Growth Centres and therefore development will not directly impact on this species.

A number of areas within the Growth Centres associated with Castlereagh woodland and *D. tenuifolia* may potentially support this species. However, the key areas identified (including the Air Services Australia Site at Shanes Park, the environmental conservation area in Marsden Park North Precinct and an isolated patch of Castlereagh woodland within the Public Recreation - Regional zone within the Kemps Creek Precinct) are all zoned for the purposes of environment conservation. Therefore, it is considered that any potential impacts to these areas will be minimal.

#### **Proposed measures to prevent, mitigate and manage potential impacts to *Allocasuarina glareicola***

While there are no known records for the species within the Growth Centres, the retention and protection of areas of potentially suitable habitat is considered to be a positive outcome for the species. As discussed, key areas of suitable habitat are predominantly located within the Air Services Australia Site at Shanes Park, the environmental conservation area in the Marsden Park North precinct and the Public recreation-regional zone within the Kemps Creek Precinct. All of these areas have been afforded a level of protection through the Program.

***Proposal to offset potential impacts to Allocasuarina glareicola***

Given that residual impacts to *A. glareicola* are considered unlikely, it is not considered necessary to provide offsets for this species.

***Conservation outcome for Allocasuarina glareicola***

The conservation outcome is considered to be a good one for this species.

There is currently a draft recovery plan for the Cumberland Plain which addresses *A. glareicola* as a component of the threatened biodiversity on the Cumberland Plain (DECCW 2009).

The conservation activities and outcomes for this species that will occur as a consequence of the Program are not inconsistent with this draft recovery plan.

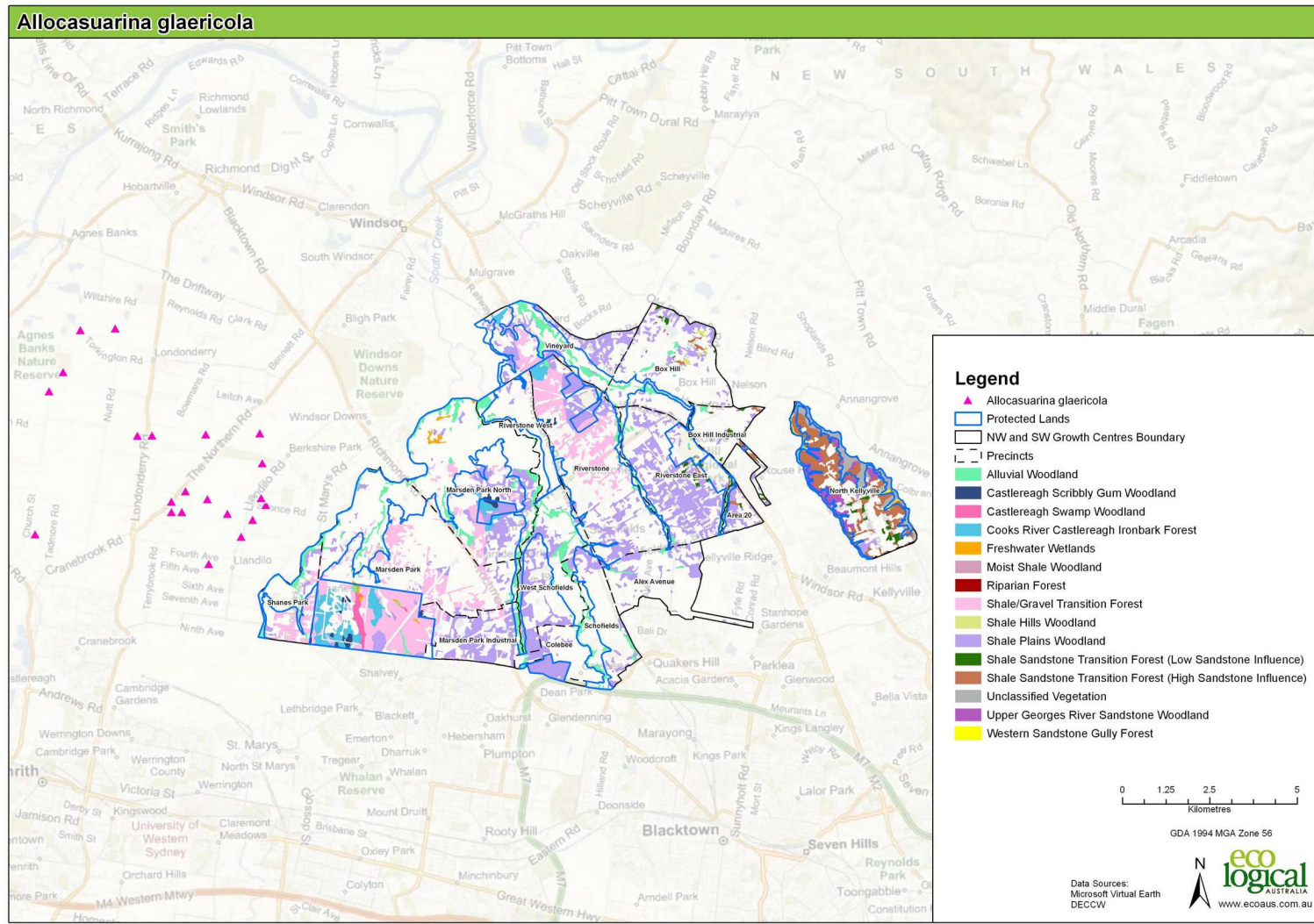


Figure 9: Species distribution and location of NSW Wildlife Atlas records for *Allocasuarina glaucicola* within and immediately surrounding the North West Growth Centre

## **Pterostylis saxicola (Sydney Plains Greenhood)**

### **Species Description**

*Pterostylis saxicola*, known as the Sydney Plains Greenhood, is a small ground orchid which flowers from September to November. Aside from the flowering period, little about the ecology of this species is known. As with other *Pterostylis* species, *P. saxicola* is a tuberous orchid, which has defined above ground growth phases characterised by few leaves and a flower spike around 35 cm tall (NSWSC, 1997). *P. saxicola* is listed as an endangered species under the EPBC Act and the NSW TSC Act.

*P. saxicola* has a known population size of only 500 individuals from five locations all within the greater Western Sydney area and Hawkesbury-Nepean Natural Resource Management area. The species extends from Freemans Reach in the North to Picton in the south (DECC, 2005b). There are known records within the Georges River National Park (single population), Ingleburn, Peter Meadows Creek, Holsworthy, and St Marys Towers (TSSC, 2008b). The largest known population occupies an area that is only 20 x 15 m (NSW SC, 1997). Due to the small population size and its restricted distribution, the species is susceptible to changes in environmental and demographic conditions.

*P. saxicola* lives predominantly in shallow soils of flat sandstone shelves which can form part of cliff lines or mossy rock gullies. This habitat occurs within sclerophyll forest or woodland and usually on shale/sandstone transitional soils or shale soils often near streams (DECC, 2005b, NSWSC, 1997).

The only population of *P. saxicola* that is currently conserved is that within the Georges River National Park, containing 40 individuals which constitute 8% of the total known population (NSWSC, 1997).

Major threats to the existence of *P. saxicola* are grazing, weed invasion, feral pigs, habitat loss and habitat degradation due to development, as well as inappropriate fire regimes (TSSC 2008b, DECC 2005b).

### **Pterostylis saxicola within the Growth Centres**

There are no known populations of *P. saxicola* within the Growth Centres. However, the five known NSW Wildlife Atlas records all occur within the vicinity of the South West Growth Centre (see Figure 10).

Potential habitat for *P. saxicola* is considered to be minimal throughout most of the Growth Centres. The largest area of potential habitat within the Growth Centres occurs within North Kellyville precinct in the form of Shale Sandstone Transition Forest, with isolated small patches also occurring within the Box Hill Precinct, Riverstone East Precinct and Area 20 Precinct. Surveys undertaken within the North Kellyville Precinct did not indicate the presence of *P. saxicola*. However, given the ephemeral nature of the species, surveys undertaken may not have recorded the species as present if the brief flowering period was missed.

Potential habitat may also occur around creek lines and drainage areas where there is emergent rock and shallow soils in both the North West and South West Growth Centres.

### **Potential impacts to Pterostylis saxicola as a result of development within the Growth Centres**

There are no known records of *P. saxicola* within the Growth Centres. The potential habitat for the species occurs primarily around the outer edges of the Cumberland Plain and is only represented in a small portion of the Growth Centres. However, some level of impact may occur to potential habitat for this species within the North Kellyville Precinct, as well as small patches within Box Hill Precinct, Riverstone East Precinct and Area 20 Precinct.

***Proposed measures to prevent, mitigate and manage potential impacts to *Pterostylis saxicola****

The key measure to prevent, mitigate and manage potential impacts to *P. saxicola* is the retention and protection of Shale Sandstone Transition Forest and riparian zones. The environmental management area of North Kellyville Precinct includes a large patch of Shale Sandstone Transition Forest, which is linked to a native vegetation retention area centred on creek lines which border the precinct.

Marginal potential habitat that occurs around creek lines and drainage areas where there is emergent rock and shallow soils in both the North West and South West Growth Centres will also be afforded a level of protection from development through designation as Flood Prone and Major Creeks land.

It is therefore considered that potential habitat for *P. saxicola* will be conserved throughout both Growth Centres.

***Proposal to offset potential impacts to *Pterostylis saxicola****

As the Program will not impact on any known populations of *P. saxicola*, and the majority of areas of potential habitat within the Growth Centres will be retained, it is not considered necessary to provide offsets for this species.

Despite this, the proposed offsets for Shale Sandstone Transition Forest may provide additional benefits for *P. saxicola*. Under the Program, the NSW Government has committed to the protection of at least 132 ha of Shale Sandstone Transition Forest outside of the Growth Centres.

***Conservation outcome for *Pterostylis saxicola****

Direct impacts on known populations of *P. saxicola* will not occur as there are no known records of the species within the Growth Centres. Impacts in relation to potential habitat may occur. However, potential habitat is considered to be minimal throughout most of the Growth Centres, and a number of areas of potential habitat that do exist will be retained. It is therefore considered unlikely for significant impacts to result from the Program.

There is currently a draft recovery plan for the Cumberland Plain which addresses *P. saxicola* as a component of the threatened biodiversity on the Cumberland Plain (DECCW 2009).

The conservation activities and outcomes for this species that will occur as a consequence of the Program are not inconsistent with this draft recovery plan.



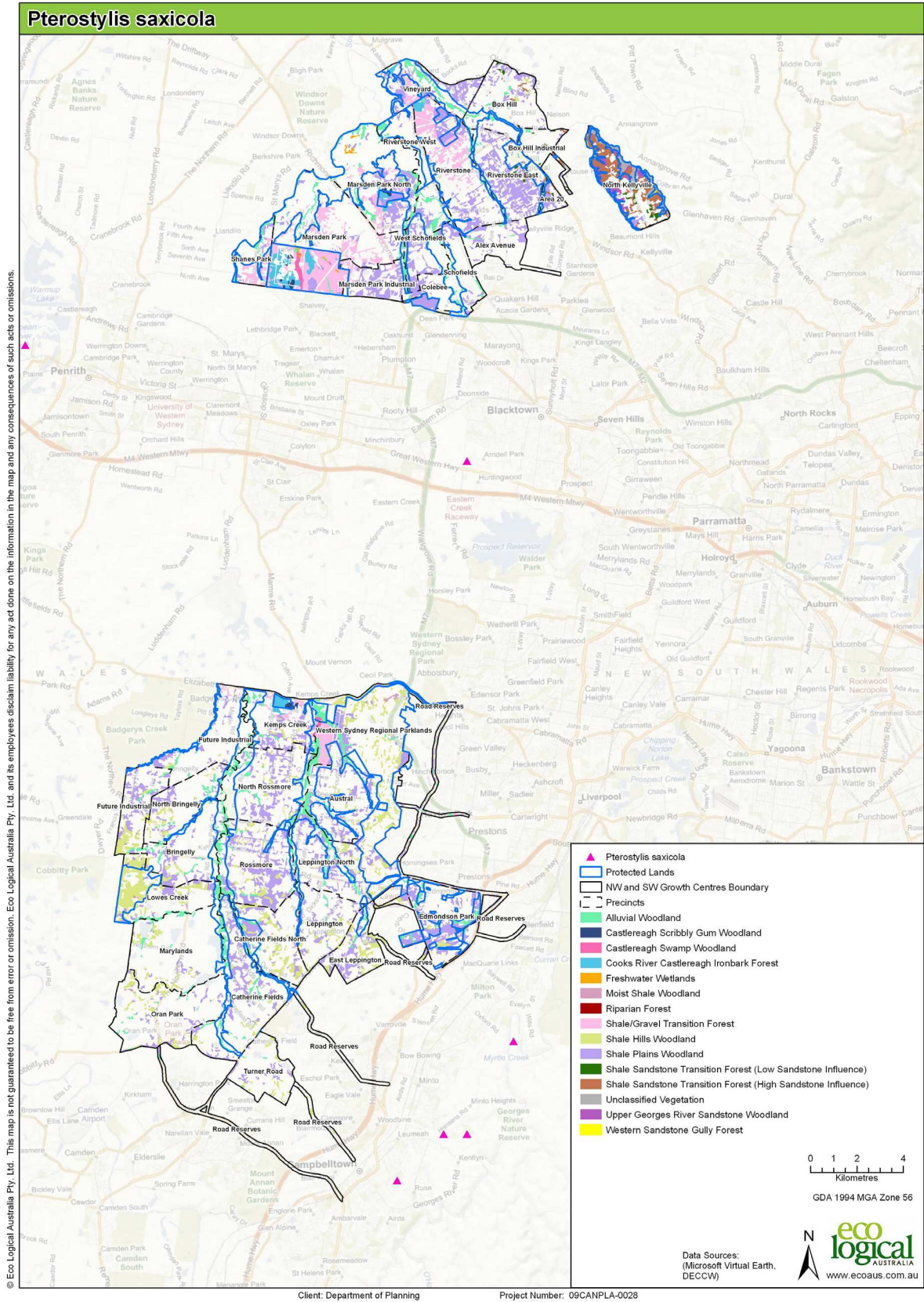


Figure 10: Species distribution and location of NSW Wildlife Atlas records for *Pterostylis saxicola* within and immediately surrounding the Growth Centres

### 4.1.3 MANAGEMENT OF CONSERVATION AREAS

#### Summary of comments

A number of submissions raised concerns over the level of protection and management that will be provided within the non-certified areas of the Growth Centres which are being retained to conserve their biodiversity value. The following issues were outlined in these submissions:

- A need for clarity over the differing levels of protection and permissible activities within the three zones of 'Environmental conservation', 'Public recreation – regional' and 'Public recreation – local' and the areas identified as 'Flood prone and major creeks land' and 'Transitional land'. A number of submissions called for stronger conservation objectives and greater restrictions on the type of recreation related permissible activities.
- A need for further information regarding the level of security of protected areas. In particular, there were concerns that land can be rezoned in the future under the existing NSW planning system and that the planning system has mechanisms to restrict or suspend the application of existing covenants, agreements and planning instruments currently protecting conservation areas.
- Concern over the level of uncertainty which exists in relation to conservation outcomes. For instance, the outcomes for a number of Relevant Biodiversity Measures are not defined, and are instead provided through words such as "...protect to the satisfaction of DECCW...".
- A need for further information in relation to how protected areas will be managed and funded into the future to conserve particular biodiversity values. Concern that funding for management, responsibility for management, on-ground management and monitoring programs have not been defined and allocated (including management of land that will remain in private ownership).
- Concern over the potential degradation over time of the biodiversity values of land which is acquired progressively within the Growth Centres. Further information is needed to better understand how these areas will be managed before they are acquired in their entirety.

#### Response

A variety of measures are employed by the Program to protect areas of biodiversity value. In order to satisfy both conservation and other planning objectives, it is considered a legitimate approach to apply a range of land-use zonings and development controls to protect the environment.

However, it is important to clarify that the primary objective of each of the areas designated for protection is environment conservation.

A number of public submissions expressed particular concern over the conservation certainty within the Public Recreation zone. While the permissible activities within this zone do allow for recreation related facilities, the land can only be used for recreational purposes that are compatible with the protection of its natural values. Furthermore, these lands will be brought into public ownership overtime through the expenditure of the \$132.5 million (2005/06 dollars) of the conservation fund allocated for securing conservation lands inside the Growth Centres.

In response to these concerns over the perceived broad nature of permissible activities within some zones used for environment protection, NSW Department of Planning have committed to a review of the Environment Conservation and Public Recreation (Regional) zones in the Growth Centres SEPP within 12 months to ensure the activities permitted are compatible with conservation objectives.

The following response to concerns over the management and protection of conservation areas within the Growth Centres is provided through:

- clarification of the different types of protected areas;
- a discussion around the on-going security of existing zones;
- information about management, funding and responsibility arrangements for protected areas; and
- a discussion of how potential degradation over time of biodiversity values within the protected areas will be managed.

### ***Types of protected areas***

The following is provided to clarify the range of mechanisms that will be employed through the Program to provide for protection of areas that will be retained for their conservation value.

There are three broad mechanisms through which 2,000 ha of native vegetation will be retained within the Growth Centres. These mechanisms are:

1. Zoning and tenure – management of land zoned under the SEPP as either Environment Conservation, Public Recreation – Regional, E3 – Environmental Management and E2 – Environmental Conservation. These zones apply to approximately 1,000 ha of land. Land within these zones is subject to the acquisition provisions of the Growth Centres SEPP, and ultimately will be brought into public ownership. The stated objectives for all of these zones are to protect and restore these areas to restore environmental values.
2. Development controls - vegetation is protected by the SEPP within zoned areas, flood-prone and major creeks land and the transitional land at Lowes Creek. The TSC Act also continues to apply and under the Biodiversity Certification any clearing required for essential infrastructure must be offset in accordance with the Relevant Biodiversity Measures. The Growth Centres SEPP includes the following controls on development within these areas:
  - Clause 20 – requires consent authorities to consider whether development in flood-prone and major creeks land will cause destruction of riparian vegetation.
  - Clause 22 – requires consent to be obtained for the clearing of native vegetation within the land zoned, flood-prone and major creeks lands, and transitional lands.
  - Clause 23 requires consent authorities to be satisfied of certain outcomes prior to the granting of such consent, including the minimisation of impacts to bushland, the reinstatement of vegetation or offsetting of impacts to avoid net loss of bushland, and a cap on clearing of ‘no more than 0.5 ha of bushland’ unless it is essential for a previously permitted use of the land.
3. Protection through existing reservations, zonings or related measures. These include:
  - Existing public reserves either in council or state government ownership.
  - Existing zoned lands within Edmondson Park Precinct.
  - Areas identified as offsets from the impacts of the M7 road construction.
  - Vegetation clearing controls applying to native vegetation retention areas which prohibit the clearing of vegetation.
  - Vegetation clearing controls applying to existing native vegetation retention areas.

Specific mechanisms for protection under the Growth Centres SEPP are discussed below. The Growth Centres SEPP is an environmental planning instrument prepared under the plan making provisions in the EP&A Act. The protected areas are non certified under the Growth Centres Biodiversity Certification and the TSC Act continues to apply. The Growth Centres SEPP will ultimately establish the land use zoning and development controls for all the land within the Growth Centres. Consent authorities, such as local councils, must apply the provisions and consider the objectives of the Growth Centres SEPP when they assess development proposals within the Growth Centres.

#### Environmental Conservation Zones

The objectives for the 'environment conservation' zone relate to the protection and restoration of areas of special ecological, scientific or aesthetic values and to conserve biological diversity, native vegetation corridors, aboriginal heritage, cultural values and scenic qualities. Any development within this zone is restricted and native vegetation is to be retained and protected. Since the finalisation of the Draft Strategic Assessment Report for public exhibition, the two conservation areas within the Riverstone Precinct have been rezoned to 'E2 Environmental Conservation' under the Riverstone Precinct Plan (Appendix 4 of the Growth Centres SEPP). These areas were previously zoned Environment Conservation and Public Recreation – Local. This land will ultimately be brought into public ownership.

#### Public Recreation Zones – Regional

The objectives of the 'Public Recreation zones' (regional) are to enhance, restore and protect the natural and cultural heritage values and to enable the land to be used for open space and recreational purposes that are consistent with the protection of natural and cultural values. This land will ultimately be brought into public ownership.

Final responsibility for the ongoing management of these areas is to be determined. Until a final decision is made responsibility will remain with the NSW Government.

#### Flood prone and major creeks land

The Growth Centres SEPP identifies the flood prone and major creeks land within the Growth Centres. This land is located along important creek and riparian corridors and is within the 1 in 100 year flood level and for these reasons has limited development potential. These areas have been identified at a regional scale and may require further detailed analysis during precinct planning. The Growth Centres SEPP introduces development controls to retain and protect existing native vegetation within these areas. Until precinct planning is completed, the underlying LEP zone, which is usually rural, continues to apply alongside the additional vegetation clearing controls. Following the completion of precinct planning, vegetation within the flood prone and major creeks land is likely to be protected through a combination of zoning and development controls.

The SEPP requires consent to be granted for the removal of any native vegetation from properties within the flood prone and major creeks lands. Before the consent authority can approve development in these areas it must be satisfied that the proposed impact on native vegetation is minimised and any loss is compensated to avoid any net loss, as well as whether the development will adversely impact the floodplain environment and flood behaviour.

#### Transitional Lands

The Growth Centres SEPP also identifies 'transitional lands'. These areas are considered to be constrained by environmental factors including topography and potentially significant vegetation and therefore are not considered suitable for extensive urban development. The SEPP introduces development controls to retain and protect existing native vegetation within these areas.

In addition, further protection and enhancement of native vegetation within these areas will be addressed during the precinct planning.

The SEPP requires consent to be granted for the removal of any native vegetation from properties within the transitional lands. Before the consent authority can approve development in these areas it must be satisfied that the proposed impact on native vegetation is minimised and any loss is compensated to avoid any net loss.

### ***On-going security of existing zoning***

The *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes the process for the rezoning of land. While it is possible that future proposals may seek to rezone the conservation areas, the Minister for Planning must approve such proposals. Furthermore there are local planning (section 117) directions that planning proposals (draft LEPs) must give effect to, such as Direction 2.1 Environment Protection Zones, which requires planning proposals to include provisions that facilitate the protection and conservation of environmentally sensitive areas. For these reasons there is considered to be limited risk of the rezoning of conservation areas for another purpose occurring.

The EP&A Act also allows consent authorities to suspend covenants and agreements for the purpose of enabling permissible development to be carried out. In order to do so, the relevant environmental planning instrument must include a 'suspension of covenants' clause which is required to be approved by the Governor. However, these clauses do not allow the suspension of: any conservation agreement within the meaning of the *National Parks and Wildlife Act 1974*; any trust agreement within the meaning of the *Nature Conservation Trust Act 2001*; any property vegetation plan within the meaning of the *Native Vegetation Act 2003*; any biobanking agreement within the meaning of Part 7A of the *Threatened Species Conservation Act 1995* or any planning agreement within the meaning of Division 6, Part 4 of the *Environmental Planning and Assessment Act 1979*. Such exclusions ensure that covenants or agreements for conservation purposes will remain in perpetuity.

### ***Management and funding arrangements for protected areas***

Final responsibility for the ongoing management of these areas is to be determined. Until a final decision is made responsibility will remain with the NSW Government. Where the land is to be acquired by the local council, it is expected that responsibility for the ongoing management of the area will remain with the local Council.

It is expected that the areas will be managed under Plans of Management. For example, it is likely that Shanes Park will be managed under the NSW *National Parks and Wildlife Act 1974* which has clear requirements around the management of protected areas. For areas acquired by a local council, a plan of management under the *Local Government Act 1993* will be prepared. The NSW TSC Act continues to apply and threatened species assessments are required to be undertaken where development is likely to have a significant effect on threatened species.

### ***Managing against the loss of biodiversity values over time***

It is acknowledged that in the absence of active management the ecological values of land may change overtime. The subject land has already been zoned for conservation and appropriate clearing controls apply. The zone objectives and limited permissible land uses should ensure that any proposed interim use of land is compatible with the conservation values. The NSW TSC Act continues to apply and threatened species assessments are required to be undertaken where development is likely to have a significant effect on threatened species. Once acquired by the NSW Government land will be managed for conservation purposes.

## 4.2 ADEQUACY OF OFFSETS

### 4.2.1 OFFSET TARGETS AND OBJECTIVES

#### Summary of comments

Issues relating to offset targets were raised in a number of the submissions. One of the key concerns was the need for a commitment to a minimum target for offsets to ensure that the amount and type of offsets would be commensurate with the relevant impacts. This concern was most often raised in relation to CPW (see Section 5).

A range of other issues were raised in relation to the design and use of offsets, including views that:

- existing conservation areas should not contribute to the overall offset target delivered through the Program, as this is seen as “double-dipping”;
- offsets should be acquired to create or maintain corridors between priority areas and other conservation areas;
- the Program should provide for the protection of the ‘Cumberland Conservation Corridor’; and
- certain areas which are particularly important for reasons of high biodiversity value should be specifically sought for acquisition through the offsets program - for instance, the Crown Lands claimed by the Deerubbin Local Aboriginal Land Council and Orchard Hills.

#### Response

##### **Offset targets**

The importance of providing greater clarity in relation to offset targets within the Program is acknowledged. Following the completion of the public exhibition process, the NSW Government has undertaken further work to define offsets targets for the Program in relation to matters of national environmental significance and in particular CPW (see Section 5).

The offsets fund will operate according to the framework established by the Biodiversity Certification. In summary, as a first preference, the offset funds will be invested within the priority areas on the Cumberland Plain identified in the Hawkesbury Nepean Catchment Action Plan (2008). Criteria for guiding the spending of annual funding within this area include a consideration of reserve design principles, conservation values and cost effectiveness. If no suitable lands are available in the areas of first preference, then a series of areas will be considered in the following sequence to protect land within:

- priority areas within the Hawkesbury Nepean catchment, as identified in the Hawkesbury Nepean Catchment Action Plan; then
- grassy woodlands within the Hawkesbury Nepean catchment; and then
- grassy woodlands within the Sydney Basin.

In relation to offsets for matters of national environmental significance outside the Growth Centres, the Program will allocate \$278.25 million (as part of the \$397.5 million for offsets outside of the Growth Centres) towards securing conservation outcomes for matters protected under the EPBC Act. As outlined above, this funding will be allocated in accordance with the framework established by the Biodiversity Certification.

The outcomes that will be delivered for matters of national environmental significance as part of the overall biodiversity offsets package have been refined in response to public comments and input from SEWPaC. The outcomes will include:

- The protection of at least 2,400 ha of either CPW or other grassy woodland communities which are similar to CPW in floristic structure outside of the Growth Centres (preference will be given to CPW followed by *White Box*, *Yellow Box*, *Blakely's Red Gum Grassy Woodland* and *Derived Native Grassland*). As part of this commitment at least 205 ha of additional HMV CPW will be protected outside of the Growth Centres (see section 5.2.1). The concepts relating to HMV are explained in Section 4.3.
- The protection of at least 132 ha of Shale Sandstone Transition Forest.
- The protection of at least 4.4 ha of Turpentine Ironbark Forest.
- The acquisition of offsets for other matters of national environmental significance through the expenditure of the Growth Centres Conservation Fund.

In addition to the outcomes to be delivered by the Program, the NSW and Commonwealth Governments have agreed to identify joint government measures in a Memorandum of Understanding (MoU) or exchange of letters that will be implemented to ensure retention of HMV CPW within the Priority Conservation Lands that are beyond the scope of the Program. This is an important outcome of the strategic assessment process which identified both the need and challenges in providing landscape scale outcomes for CPW. See section 5 of this report for a further discussion of this outcome.

### **Other issues**

It is recognised that including existing conservation areas as part of the package delivered through the Program may not be consistent with conventional offsetting principles that offsets should be supplementary to previously established conservation outcomes. However the Growth Centres package including the SEPP identified areas for development and areas for conservation all within the broader objective of sustainably managing the growth of Sydney. The Growth Centres will provide up to 30% of new housing with the majority of new housing being provided in established areas. The Strategic Assessment is based on this package of which some of the conservation outcomes have been secured early in the planning process to provide certainty.

However, unlike a site-by-site level assessment, the inclusion of existing conservation areas provides part of the picture for a large-scale strategic assessment. One of the key motivations behind undertaking a strategic assessment is the delivery of a landscape-scale conservation outcome. For this to be achieved, the overall level of vegetation protection needs to be considered and accounted. To ensure transparency in this accounting, the Draft Strategic Assessment Report clearly differentiates between existing protection and additional protection delivered through the Program.

Other comments received in relation to offset targets and objectives suggest alternative approaches for identifying priorities for conservation. These include the approach of directing acquisition of land to provide corridors or linkages between priority areas, protection of the Cumberland Conservation Corridor (CCC) and protection of specific areas seen to be important for reasons of high biodiversity value and potential connectivity for some animals.

It is acknowledged that each of these suggestions have some level of conservation merit. However, while conservation or biodiversity values is a key driver in identifying offset areas, the criteria for guiding spending of the Growth Centres offsets fund needs to incorporate a range of factors in addition to this. These include reserve design principles relating to management viability, cost

effectiveness and availability of land or willingness of landowners to engage in recovery actions. Within the context of these sometimes competing interests, the priority lands that have been identified in the Hawkesbury Nepean Catchment Action Plan (2008) are expected to represent the most appropriate areas for conservation investment.

The Western Sydney Conservation Alliance has proposed the creation of a Cumberland Conservation Corridor (CCC) with the vision of creating a continuous connection between Mulgoa and Agnes Banks Nature Reserves. There is considerable overlap between the CCC concept and the Offset Program, and to a lesser extent, the Strategic Assessment Program.

Much of the bushland within the CCC is of high conservation value, including some relatively small areas of CPW which may contribute to the offset commitments in the Program, and is within the priority conservation lands. It is important to note that the Offset Program considers available properties for purchase or conservation agreements against other parcels within all priority conservation lands in the Cumberland Plain. The priorities for investment each year are determined by considering a range of factors specified in the biodiversity certification of the Growth Centres SEPP, including conservation outcomes, configuration and cost effectiveness. Specific properties may have high biodiversity values but if they are very small, poorly configured (for example, very narrow) or very expensive these are not likely to be pursued by the Offset Program.

There are practical problems with some aspects of the CCC as proposed which restrict the potential contribution of these aspects to the Program. A considerable portion of the CCC is privately owned, cleared land already zoned for urban development. Pursuing any form of conservation investment in these areas is not feasible because their market value is extremely high. The CCC also includes considerable areas of former farmland dominated by improved pasture. The section along the riparian zone of South Creek between the Orchard Hills and ADI sites is one example. There is little evidence that improved pasture can be restored to any endangered ecological community, hence these areas would not be suitable for funding from nor contribute to offsetting commitments in the Program. It is acknowledged that such areas may contribute significantly to broader biodiversity and public amenity objectives.

Crown lands that have been subject to land claims and that are no longer publicly owned will be considered in the same way as any other privately owned land across the Cumberland Plain. DECCW have identified the Priority Conservation Lands as the best remaining opportunities to maximise long term biodiversity benefits for the lowest possible costs, including the least likelihood of restricting land supply.

#### **4.2.2 OFFSETS FOR TURPENTINE IRONBARK FOREST**

##### **Summary of comments**

One of the public submissions suggested that offsets should be required to compensate for loss of 2.2 ha of Turpentine Ironbark Forest within the North West Growth Centre.

##### **Response**

On the basis of public comments and input from SEWPaC in relation to this issue, the NSW Government has revised the Program and incorporated offsets for Turpentine Ironbark Forest. The Program will protect at least 4.4 ha of the EPBC listed ecological community. This outcome is considered to be appropriate given the scale and nature of the impacts.



### 4.2.3 UNCERTAINTY IN WHAT WILL BE DELIVERED

#### Summary of comments

The level of uncertainty in the relation to the conservation outcomes which will be delivered through the Offset Program outside of the Growth Centres was raised as an issue in a number of the public submissions. Comments addressing this issue are summarised as follows:

- Requirements to audit and report on offset outcomes need to be better defined, and information needs to be provided outlining what measures will be followed should problems arise in offset delivery or compliance and what the consequences of this will be.
- Further information is needed in relation to how offset areas will be managed and funded into the future. Concern that funding for management, responsibility for management, on-ground management and monitoring programs have not been defined and allocated.
- Concern that areas identified for acquisition through the offset program will degrade over time in the absence of active management, and will no longer be suitable as biodiversity offsets when funding becomes available.

#### Response

##### **Reporting offset outcomes**

The reporting requirements in relation to offsets are established in both the RBMs and the Program. These requirements include public annual reports that present (among other things):

- the amount of money spent on offsets in the previous financial year; and
- a summary of the conservation outcomes achieved by that expenditure.

In relation to the issue of offset delivery, as outlined previously the Offset Program provides for a cascading set of preferences for the purchase of offsets. This approach has been designed to ensure that appropriate offsets can be delivered over the life of the Program to provide appropriate conservation outcomes.

##### **Funding and management of offset areas**

The NSW Government recognises the importance of ongoing management of the offset areas. Given that the Offset Program is based on both the acquisition and establishment of biobanking agreements, there will be a range of ongoing management approaches to ensure the maintenance of environmental values of the offset areas. These approaches will include (among other things) management of offsets under the *National Parks and Wildlife Act 1974* (e.g. National Park) and management under the biobanking framework. The RBMs of the Biodiversity Certification also allows for a proportion of the Conservation Fund to be allocated for the initial management costs where land is purchased.

While the details of these mechanisms cannot be defined prior to the establishment of offsets, because these arrangements are finalised through voluntary negotiations with landholders, management of these areas is a key focus and appropriate mechanisms will be established to ensure that the long term conservation values of the offset areas are maintained.

##### **Suitability of offset areas**

It is acknowledged that in the absence of active management the ecological values of land may change overtime. However, given that the majority of potential offset areas exist on private land, the NSW Government cannot ensure active management of these areas prior to the land being acquired.

In order to ensure that the conservation values of offset areas are suitable, DECCW will undertake detailed investigations prior to proceeding with an acquisition or biobanking agreement through the Offset Program. RBM 33 establishes criteria to be considered in the targeting of particular lands.

This framework for the assessment of offsets prior to purchase will ensure that only suitable areas will be subject to offsetting.

#### **4.2.4 COMPULSORY ACQUISITION**

##### **Summary of comments**

A number of the public submissions suggested that compulsory acquisition should be used. It was argued that this will allow commitments to conservation and offset targets and ensure certainty of delivery.

##### **Response**

Compulsory acquisition is not proposed as part of the Growth Centres Program. RBM 33 explicitly states that 'no land is intended to be compulsorily acquired in order to meet any of the conditions of biodiversity certification'. The approach of purchasing land over time as it becomes available is considered to be appropriate given that:

- it provides an efficient mechanism for allocating the offset funds over the life of the Program to ensure the maximum offset area is purchased;
- there are a range of environmental values that need to be incorporated into the offset areas which means that a wide variety of land will be suitable for purchase; and
- the framework of cascading preferences for purchasing offsets ensures that there will be suitable areas for purchase.

#### **4.2.5 LIKE FOR LIKE OUTCOME**

##### **Summary of comments**

The 'like-for-like principle' is the concept that offsetting should be targeted to the specific environmental value being impacted by a development. Perceived failure to meet this principle for species and ecological communities was a key issue raised in many of the public submissions.

Most of these submissions argued that offsetting outside of the Cumberland Plain does not provide a 'like-for-like' outcome. It was argued that many of the rare and threatened flora that will be impacted within the Growth Centres are endemic to the Cumberland Plain and will be lost without adequate protection elsewhere.

There was concern that as a consequence of including cost effectiveness as one of the criteria to guide the spending of the offsets fund, offsetting within the Cumberland Plain will be minimal, as land prices are considerably more expensive than other areas supporting grassy woodlands within the Sydney Basin more broadly.

Submissions highlighted the implications of not being able to offset on a 'like-for-like' basis. It was suggested that an inability to compensate for the loss of particular threatened species and ecological

communities with habitat which supports those same threatened species and ecological communities indicates that the extent of development and associated clearing is too great.

## Response

The importance of ensuring appropriate conservation outcomes within the Cumberland Plain as well as more broadly across the Sydney Basin is acknowledged. As discussed previously, since the completion of the public exhibition process the NSW Government has undertaken further work to define offsets targets for the Program in relation to matters of national environmental significance. This particularly relates to offset targets focused on environmental values present on the Cumberland Plain (e.g. CPW). See Section 4.1.

In relation to offsetting for species, the Program proposes measures for impact avoidance, mitigation and offsetting for each relevant endemic species of flora and fauna. In identifying the priority conservation lands within the Growth Centres, identified populations of such species were included, regardless of vegetation communities present. These will be considered as first priority when looking for offsetting opportunities outside the Growth Centres. NSW has already demonstrated that this approach can work to secure protection of endemic plants. For example, the Growth Centres Offsets Fund contributed to the purchase of land at Cranebrook, which has several very significant populations of endemic and Commonwealth listed plants. Where species occur both within and outside the Cumberland Plain, offsets will be sought within the Cumberland Plain first, and then in the broader region.

Applying the “like-for-like” concept too rigidly to vegetation communities is problematic, both scientifically and practically. Firstly, vegetation communities are not like species; they are not discrete entities like animals and plants. Vegetation communities are identified based on expert opinion and do not generally have discrete boundaries, but grade from one into the next. They can be defined by law, and these legal criteria can be used to identify them in the field and to evaluate them in studies, but the names and identities of vegetation communities can and do change as new information comes to light.

The species making up Cumberland Plain Woodland are not generally endemic, and occur beyond the Cumberland Plain. Many of the same plants found in Cumberland Plain Woodland are found in other grassy woodlands. Some other areas are very similar to Cumberland Plain Woodlands, and are not very far away, including the Capertee Valley, 90 kilometres to the northwest of Richmond, and in the Burratorang Valley, 45 kilometres to the southwest of Picton. The analysis of the similarity is very solid scientifically, based on 10,000 vegetation plot data sets within the Sydney Basin.

Ecological communities are important habitats, based on characteristics such as the structure of the canopy, the degree of understorey, and the presence of tree hollows. The Cumberland Plain Woodland was once habitat for many animal species which are generally no longer present, whereas in the grassy woodlands elsewhere these species are still found. “The Fauna of Greater Southern Sydney” (DECC 2007) recognised that grassy box woodlands between the Burratorang Valley and the Cumberland Plain supported very similar assemblages of woodland birds. The status of these bird species is well recognised as a group of species known as “declining woodland birds”, and many are listed as threatened under the *NSW Threatened Species Conservation Act 1995*.

A final practical consideration is cost. It is accepted that land in the Cumberland Plain is very expensive compared to other areas. This does not mean the offsets will not be sought there; in fact, this year a Biobanking agreement was established over 80 ha within the Cumberland Plain through the Offset Program. Consideration of cost-effectiveness will take into account independent land valuation compared to other Cumberland Plain opportunities, as well as the benefits of protection. The lack of specificity about what cost-effectiveness means is also important to ensure that cost of

conservation in the Cumberland Plain does not simply rise to some threshold, resulting in less money available for conservation.

As with any policy principle, consideration of the like-for-like concept should not be simply applied disregarding all other considerations and the likely consequences of its use in a particular circumstance. Discretion needs to be maintained so that poor outcomes do not result from good intentions. The draft Program concludes that the approach of only allowing offsets for impacts on ecological communities within the Cumberland Plain would have a worse outcome for animal populations, protect a much smaller area of land, and be much more expensive to manage. The conservation rationale for maintaining the flexibility for offsetting within and outside of the Cumberland Plain was addressed in the Draft Program Report and the discussion from that document (which remains relevant) has been reproduced in the text box below.

#### **Conservation rationale for offsetting both within and outside of the Cumberland Plain**

The Growth Centres Conservation Fund is focused on securing cost-effective offsets inside and outside of the Growth Centres that provide large remnants of intact native vegetation with the greatest potential for retaining biodiversity values over time.

While there has been an emphasis in the past on only obtaining offsets near to where impacts occur in the same habitats (“like-for-like”), generally driven by local interest, this approach would severely limit the potential for the Fund to secure large tracts of vegetation for the future. The Fund is therefore structured to provide a balanced approach to securing offsets both within and outside of the Cumberland Plain to provide the maximum biodiversity benefit.

The priorities of the Fund are twofold. Inside the Growth Centres it is to progressively acquire and manage land for offsets. This land has been zoned under the Growth Centres SEPP for environmental conservation. The first priority for the Fund for offsets outside the Growth Centres is to find and secure offset areas within the priority conservation lands on the Cumberland Plain. This approach provides the opportunity to secure the best remaining vegetation (of a similar type to the Growth Centres) within a fragmented and degraded landscape.

As a second preference, the Fund then focuses more broadly to allow for the protection of larger, more cost-effective offset areas within the wider Sydney Basin Bioregion and the Hawkesbury-Nepean Catchment. There is a strong rationale for this approach based on trends in climate change adaptation, conservation theory, and cost effectiveness.

Over time, climate change is likely to result in changes in areas where plants and animals occur. Securing real corridors known to be used by animals within the wider Sydney Basin Bioregion and the Hawkesbury-Nepean Catchment would support the ecological functioning of some of the priority conservation lands within the Cumberland Plain.

Ecological communities are generally described as lists of plant species. This is the standard practice for both the NSW and Commonwealth Governments. The Commonwealth ecological community of CPW listed under the EPBC Act is the most prevalent Commonwealth ecological community in the Growth Centres. By comparing the typical composition of CPW with the composition of grassy woodlands elsewhere in the Sydney Basin Bioregion and Hawkesbury Nepean Catchments, it is possible to identify vegetation assemblages which have a similar composition to CPW. Unlike species descriptions, the taxonomy of vegetation communities is an inexact science. This is a result of the fact that vegetation “communities” are assemblages of co-occurring species whose habitat requirements and ranges overlap.

A further argument in favour of allowing offsets for CPW to occur outside the Cumberland Plain relates to the function of vegetation as a surrogate for animal habitat. Species-specific habitat relationships between birds, reptiles or mammals and plants are rare in Australian systems; the physical structure of vegetation communities is the primary driver for what species occur there. In general, grassy woodlands in Sydney Basin Bioregion and Hawkesbury Nepean Catchments provide habitat for woodland birds and other native animals, many of which are already extinct or rare on the Cumberland Plain.

While it is crucial to continue to identify the best remaining opportunities for conservation within the Cumberland Plain, the securing of offset lands in the broader area provides the opportunity to protect much larger areas of remnant native vegetation. For example, the cost of Cranebrook was more than \$96,000 per hectare, compared to approximately \$1,500 per hectare for a proposed new reserve in the Capertee Valley, which is a ratio of 64 to 1. Of course, this simple comparison does not take into account the unique biodiversity of each property but it provides an indication of the high cost of Western Sydney land. The approach presented in the Program will ensure that, over the more than 30+ year life of the Program, the best opportunities for conservation in the Cumberland Plain are taken, while significant areas of other EPBC-listed grassy woodlands are also conserved.

#### **4.2.6 FOCUS ON PROTECTING MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE**

##### **Summary of comments**

A number of submissions raised concerns over the allocation of a proportion of the offset funding to protect matters of national environmental significance. It was suggested that this change in focus of the offset funding is inconsistent with commitments made through Biodiversity Certification.

It was also argued that tying biodiversity investment from the offset fund to matters of national environmental significance would result in a negative conservation outcome compared with maintaining the funding direction dedicated under Biodiversity Certification. This is because the NSW TSC Act is seen to contain a more accurate, comprehensive and broader listing for species and ecological communities.

##### **Response**

The proportion of the offset funding allocated to protecting matters of national environmental significance is 70% of the funding to be spent outside of the Growth Centres, which equates to \$278.25 million.

This amount represents a pro-rata proportion of the conservation funding. That is, 1,270 ha of EPBC listed communities will be impacted within the Growth Centres, which equates to approximately 70% of all vegetation impacted.

Importantly, the spending of this offset funding is still required to be consistent with the preferences and locations defined under Biodiversity Certification. The considerable overlap between listings under the TSC Act and the EPBC Act enables a proportion of the funding to be directed towards protecting matters of national environmental significance without being incompatible or undermining the commitments and objectives made under Biodiversity Certification. This approach does, however, provide a greater level of certainty specifically around outcomes for matters of national environmental significance.

#### 4.2.7 FUNDING OF THE OFFSETS PROGRAM

##### Summary of comments

A number of submissions requested further information to understand how the offset funding was determined and how the calculations deal with increasing property prices and indexation of funds over the 30 year period.

##### Response

The \$530 million (2005/06 dollars) Conservation Fund was established to fund the Growth Centres Biodiversity Certification. The \$397.5 million (2005/06 dollars) is allocated for offsets outside the Growth Centres.

The funding is required to be allocated annually proportional to the extent of development expected to occur within the Growth Centres. The funding projections are calculated annually based on the predicted lot yields within the Growth Centres and an index which accounts for changing land values. The purpose of the index is to ensure that the conservation funding retains an equivalent ability to purchase land over the life of the Offset Program. The funding for the Offset Program is allocated in accordance with a ten year payment timetable which is updated annually (in accordance with RBM 22).

The Annual Reporting requirements under RBM 31 require DECCW to publish a report that includes details of the: amount of funding provided from the Conservation Fund; the amount expended and the predicted funding provision from the Offset Program for the next 10 years. This information is published in the Growth Centres Biodiversity Offset Program Annual Report. A copy is available on the DECCW website at <http://www.environment.nsw.gov.au/biocertification/growthcentres.htm>.

#### 4.2.8 DERIVED GRASSLANDS

##### Summary of comments

A few of the public submissions raised issues relating to derived grasslands. It was suggested that a better understanding of the distribution of derived grasslands is needed to better understand the relationship between these areas and wooded remnants. This information may potentially be used to broaden the scope of offsets.

##### Response

While the biodiversity value of derived grasslands on the Cumberland Plain is acknowledged, the focus of EPBC Act offsets within the Cumberland Plain remains targeted to matters of national environmental significance. Derived grasslands are excluded from the EPBC Act definition of CPW and are therefore not considered under the Program as a target for offsetting.

Rather, offsets within the Cumberland Plain are primarily focused on:

- CPW;
- Shale Sandstone Transition Forest;
- Turpentine Ironbark Forest; and
- habitat for a range of threatened species.

## 4.3 ADEQUACY OF ASSESSMENT METHODS

### 4.3.1 GROUND TRUTHING

#### Summary of comments

A number of submissions raised a view that the landscape scale data used in the assessment was not appropriate. Specific issues that were raised included:

- A view that the age of the data that was used to inform the NSW vegetation mapping was out of date.
- A view that on-ground, site-specific assessments (ground truthing) should be carried out within the Growth Centres. This is because the lack of ground truthing may:
  - lead to a failure to detect the presence of biodiversity values, including populations of threatened species, on land earmarked for development. A failure to identify the presence of these values could mean that they are not protected from development and are therefore lost; and
  - conversely lead to a failure to detect degraded vegetation on land that has been earmarked for conservation due to its perceived high biodiversity value. If this were the case, it would not contribute towards a good conservation outcome, and would unnecessarily impede development potential. There was a view that any limitations on development potential should be based on supporting detailed assessment.
- A suggestion that further data should be accessed from experts and consultants to inform the assessment. Particularly in relation to threatened flora records.
- A view that previous survey effort should be evaluated to better understand potential data gaps within the Growth Centres.
- Comments that the Program needs to identify how any unexpected new information, such as a new sighting of a threatened species, will be dealt with.
- Comments that the vegetation within the transitional lands at Lowes Creek is in poor condition and has limited conservation value.
- A concern was raised in relation to the different boundaries of the Cumberland Plain that were used in the mapping in the Draft Strategic Assessment Report and the implications that may have for the identification of the EPBC Act listed threatened ecological communities.

#### Response

Mapping at different scales is a common practice in conservation planning globally. For strategic, landscape level planning, mapping based primarily on aerial photography or satellite imagery is standard.

The vegetation mapping by Tozer (2000) was used to define good condition Cumberland Plain Woodland. The vegetation in this region mainly occurs on private land and hence the majority had not been subject to on-ground biological survey. There was no prospect of achieving access for surveys due to the large number of landowners (more than 20,000 individual lots). The method of prioritisation used was appropriate since it could be applied consistently throughout the Cumberland Plain.

Because the vast majority of properties have not been surveyed by a qualified ecologist, it is likely that there will be some areas mapped incorrectly. For this reason, the strategic level mapping alone cannot be used to make final decisions about a particular property, such as incentive funding or

development application decisions; for such decisions surveys of the property will be necessary. This is a common problem in conservation planning and is not unique to the Cumberland Plain.

The strategic assessment of the Growth Centres Program provides an opportunity to consider development and conservation at a landscape scale across large parts of western Sydney. As outlined previously, this approach enables a consideration of issues at a scale that cannot be achieved through site-by-site assessment. A key benefit of a strategic approach to planning and environmental assessment is the ability to look across the landscape and identify the priorities for conservation both within and outside the Growth Centres.

The assessment approach that has been applied throughout the process has therefore been designed around the need to examine outcomes at a landscape scale. For each of the relevant matters of national environmental significance the following general issues were considered:

- the values of the matter in relation to the Growth Centres (e.g. distribution, presence, important areas etc);
- potential impacts to the matter;
- proposed measures to mitigate and manage potential impacts;
- proposed offset measures; and
- the conservation outcome for the matter.

A key issue in undertaking the assessment was ensuring that appropriate data was available to understand issues at a landscape scale. Fortunately, comprehensive landscape scale vegetation mapping exists for the Cumberland Plain which provided a sound basis for undertaking the assessment.

It is recognised that the data used in the assessment process may not be appropriate for a site-by-site scale assessment of an issue. Site-by-site assessments do offer the opportunity to examine environmental attributes at a much finer scale. However, as outlined above, the downside of site-by-site assessment is the inability to address conservation issues strategically and the constraints of cost, timing and access to privately owned land make comprehensive ground truthing an impractical exercise at the regional scale.

The following response to specific concerns over a lack of ground truthing within the Growth Centres is provided through a discussion of:

- the adequacy of the vegetation mapping used; and
- the type of threatened species information used and how this manages risks associated with a lack of ground truthing.

### ***Vegetation mapping***

Vegetation mapping used in the Draft Strategic Assessment Report is drawn from NSW Government data on remnant vegetation across the Cumberland Plain (NPWS 2002). Further detail can be found in the *Native Vegetation Maps of the Cumberland Plain Western Sydney – Interpretation Guidelines* (NPWS 2002).

In summary, the mapping was developed for all remnant vegetation across the Cumberland Plain using a combination of both aerial photograph interpretation (API) and on-ground data. The mapping identifies all intact remnants greater than 0.5 ha in size from 1:16 000 scale stereo aerial photographs (taken in Nov 97 – March 98). Field surveys were carried out at over 400 sites to provide detailed



floristic information to input into the mapping. A range of attributes (e.g. canopy species and understory characteristics) were applied to the mapped vegetation data.

Since the completion of the original mapping in 2002, the mapped extent of Cumberland Plain Woodland (as listed in NSW) was updated using 2007 imagery, and in 2009 the extent of clearing in the Growth Centres was monitored.

The limitations of API mapping are well understood by technical users. For example, mapping across large landscapes will always result in some level of misinterpretation of the vegetation on the ground. For this reason, where land is being acquired for the purposes of conservation, on-ground survey data will be obtained to confirm the presence of mapped biodiversity values.

However, in order to conduct a landscape scale assessment across the whole of the Growth Centres and Cumberland Plain more broadly, mapping at this scale is essential. Site by site survey data is not possible for a range of reasons (e.g. access to land, cost) and the NSW mapping is recognised as providing an outstanding resource for mapping native vegetation across the Cumberland Plain.

The update of the extent of Cumberland Plain Woodland using 2007 imagery provides the required currency to the data, increasing its reliability for this assessment.

The mapping has been used to identify the extent of the relevant EPBC Act listed ecological communities. The NSW and Commonwealth definitions for *Shale Sandstone Transition Forest* and *Turpentine-Ironbark Forest in the Sydney Basin Bioregion* are very similar and the correlation of the mapping was considered to be adequate.

The EPBC Act definition of *Cumberland Plain Shale Woodlands and Shale Gravel Transition Forest* was recently changed by the Commonwealth Government. DECCW (2009) developed an agreed approach with the Commonwealth (for the purposes of the strategic assessment) to use the NSW mapping data to identify the extent of the EPBC listed ecological community. The results of this approach provide sufficient reliability for the landscape scale assessment applied in this report.

### **Threatened species information**

Comprehensive site by site survey information for threatened species within the Growth Centres is not available. The analysis undertaken in the Draft Strategic Assessment Report uses various sources of information to understand the importance of the Growth Centres as potential threatened species habitat.

A key part of this approach is information from the Atlas of NSW Wildlife (the Atlas). The Atlas is a database of flora and fauna records across NSW. It is a condition of a scientific licence under the NSW *National Parks and Wildlife Act 1974*, which are routinely held by consultants, experts and scientists working in native vegetation regardless of land tenure, that any observations of threatened species or ecological communities be reported. It currently holds over 4 million records and is managed and maintained by DECCW. Atlas records come from a variety of sources and can be of varying reliability. The records used in this project were 'cleaned' by DECCW to ensure that low reliability records were not used.

Given that the Cumberland Plain has been the subject of extensive monitoring over the years, the Atlas records provide a strong (if not complete) indication of the potential importance of the Growth Centres for threatened species. It is recognised however that areas of the Growth Centres have not been surveyed and may provide habitat for threatened species.

In order to supplement the Atlas information, two additional sources of information on threatened species were used:

1. survey data that is available for Precincts that have been or are undergoing detailed planning; and
2. input from experts in relation to selected threatened species.

Discussions with species experts (e.g. in relation to Green and Golden Bell Frog and the majority of the flora species) provided the opportunity to undertake a risk based approach to identifying potentially important areas within the Growth Centres that had not been identified through the Atlas records. There is a wealth of unpublished information available through academics, consultants and DECCW staff. Where possible, relevant experts were consulted to supplement the published information.

In addition to Atlas records, previous survey data and consultation with species experts, the Program also identifies the areas where further on ground investigations are required for the following threatened flora species: *Acacia pubescens*; *Grevillea parviflora* subsp. *parviflora*; *Persoonia nutans*; and *Pimelea spicata* as part of the detailed precinct planning. These species are listed under both the EPBC Act and TSC Act and surveys at the precinct planning stage will provide the potential for further conservation outcomes for these species.

While comprehensive site by site information is not available for the Growth Centres, it is considered that the approach as described above is adequate for a landscape scale assessment of the potential impacts to threatened species and that this approach sufficiently negates the risks of failing to detect important areas for these species.

### ***Transitional Lands***

Vegetation within transitional lands at Lowes Creek is identified in the Growth Centres Biodiversity Certification and the Strategic Assessment as areas to be retained. Protection and retention of vegetation within the transitional lands will contribute towards the 2,000ha of existing native vegetation to be protected under the Growth Centres Biodiversity Certification.

However before a final decision is made to protect vegetation on this land, ground truthing will be undertaken as part of the precinct planning process to confirm the nature and extent of the vegetation. If confirmed through precinct planning then the vegetation will be retained through a combination of zoning and development controls.

### ***Cumberland Plain Boundary***

Two different boundaries for the Cumberland Plain were used in the Draft Strategic Assessment Report. The first (used in Figures 10 and 11) provides a broad overview of the Cumberland Plain and is appropriate for the scale of the maps that it is used for. In the other figures in the report, a more detailed boundary of the Cumberland Plain was used. Both are correct (and consistent) but are useful at different scales and applications.

In relation to the potential implications for the identification of the EPBC Act listed threatened ecological communities which occur on the Cumberland Plain, the key issue is that the vegetation mapping used in the report is the most up-to-date and accurate available. As discussed in Section 9.2 of the Draft Strategic Assessment Report, the vegetation mapping used in the report is drawn from NSW Government data on remnant vegetation across the Cumberland Plain (NPWS 2002). While the limitations of API (aerial photograph interpretation) mapping are well understood, the mapping is recognised as providing an outstanding resource for identifying native vegetation across the Cumberland Plain.

### 4.3.2 MANAGEMENT VIABILITY CONCEPT

#### Summary of comments

A number of submissions expressed a view that the management viability concept applied to understanding the long term viability of vegetation is inappropriate. There was criticism of the methodology used and therefore the decision on which areas should be retained and lost.

A number of comments suggested that it is inaccurate to assume that vegetation patches less than 4 ha in size are unlikely to be viable. Particular issues with this assumption included:

- A view that the 4 ha minimum patch size cannot be reconciled with listings for CPW under the TSC Act (which specifies no threshold) and the EPBC Act (which specifies a 0.5 ha threshold).
- A suggestion that there are published examples of local government authorities in western Sydney actively managing smaller remnants for conservation values.
- A view that small remnants may still contain important biodiversity values, and some small remnants will contain higher values than some larger remnants. Smaller remnants can be species rich, resilient and viable, and many regionally rare species are restricted to smaller remnants. For this reason, it was suggested that protected areas should comprise both priority and support conservation lands, particularly for communities and species not well represented in the priority lands or DECCW estate.
- A view that in determining the viability of small vegetation patches, key factors such as connectivity, vegetation condition, and the condition of neighbouring vegetation patches should be the primary consideration, as opposed to patch size.

Other issues that were raised in public comments include:

- The assessment does not define the concept of viability.
- Concern that the proposed plan allows the further clearing of endangered ecological communities on the basis that remnants now fail the 'viability test' because they are degraded, fragmented and too expensive to protect.
- Concern that the assessment of condition and conservation value has not taken into consideration the present state of individual communities, i.e. what equates to 'poor condition' in one community may be considered 'good condition' in a highly degraded community. In reality, remnant 'condition' is determined by multiple variables and one single index may not adequately assess the importance of all vegetation remnants.
- The assessment did not discuss the level of protection required to ensure the survival and biodiversity of each threatened ecological community.
- It is unclear whether land tenure influenced management viability value. Land tenure can influence a remnant's security and prospect for protection and management.

#### Response

The management viability concept relates to the identification of vegetation within the landscape that is more likely to provide greater biodiversity value and long-term ecological viability. This process was considered to be important in the development of the Draft Strategic Assessment Report as it provides a clear way of understanding the relative viability of vegetation across a highly variable landscape.

From an ecological perspective, targeted retention of areas that are more likely to be viable in the long-term and considered more likely to lead to the long-term survival of the various ecological communities. This can be compared with the history of ad-hoc, non-strategic conservation planning and the gradual, largely unregulated loss of vegetation within western Sydney over a long period of time.

Nevertheless, NSW threatened species legislation and in some areas the *Native Vegetation Act 2003*, as well as tree protection orders, continue to apply to small remnants in the Cumberland Plain.

In developing the criteria for management viability, it was important to use criteria that were:

- based on remotely sensed information (i.e. landscape scale mapping). This was critical in order to provide a consistent and applicable methodology at a large scale. As outlined in the previous section, comprehensive ground truthing across the Growth Centres is neither practical or necessary for landscape scale environmental assessment; and
- informative about the likely future viability of the vegetation (i.e. looked at the different elements that can influence whether an area can be effectively managed and maintained into the future).

#### ***Explanation behind the management viability methodology***

As outlined in the draft strategic assessment report, management viability of the EPBC Act listed threatened ecological communities was mapped into three categories – high, moderate and low long-term management viability.

The criteria used to define the management viability of each patch of vegetation included:

- Condition of the vegetation. Only good quality patches (based on the existing vegetation mapping) were incorporated into either high or moderate long-term management viability areas. All other areas of EPBC Act listed ecological communities were mapped as low long-term management viability. The rationale for this approach is that areas that are currently in poor condition are considered less likely to be viable in the long-term. The existing vegetation mapping broadly maps areas with canopy cover greater than 10% as good condition and this is considered an appropriate indicator of ecological community condition at the landscape scale for the communities assessed within the Growth Centres.
- Patch size. Vegetation remnants that are equal to or greater than 4 ha were incorporated into either high or moderate long-term management viability areas. All other areas of EPBC Act listed ecological communities were mapped as low long-term management viability. While it is acknowledged that some smaller patches of vegetation may contain high biodiversity values, patch size is an important indicator of long-term resilience and the ability for vegetation to be managed successfully in the long-term. Particularly in an urban context where edge effects can be intense.

The patch size threshold was chosen after taking into account the fragmented nature of the remaining vegetation on the Cumberland Plain, the relative biodiversity values of larger patches compared to smaller patches in Western Sydney, and the likely pressures on small remnants within the Growth Centres once they are surrounded by intensive urban development. The 4 ha threshold was applied in the Conservation Plan (GCC 2007) and is supported by work on fragmentation which suggests that remnant area is the best predictor of species richness (Drinnan 2005).