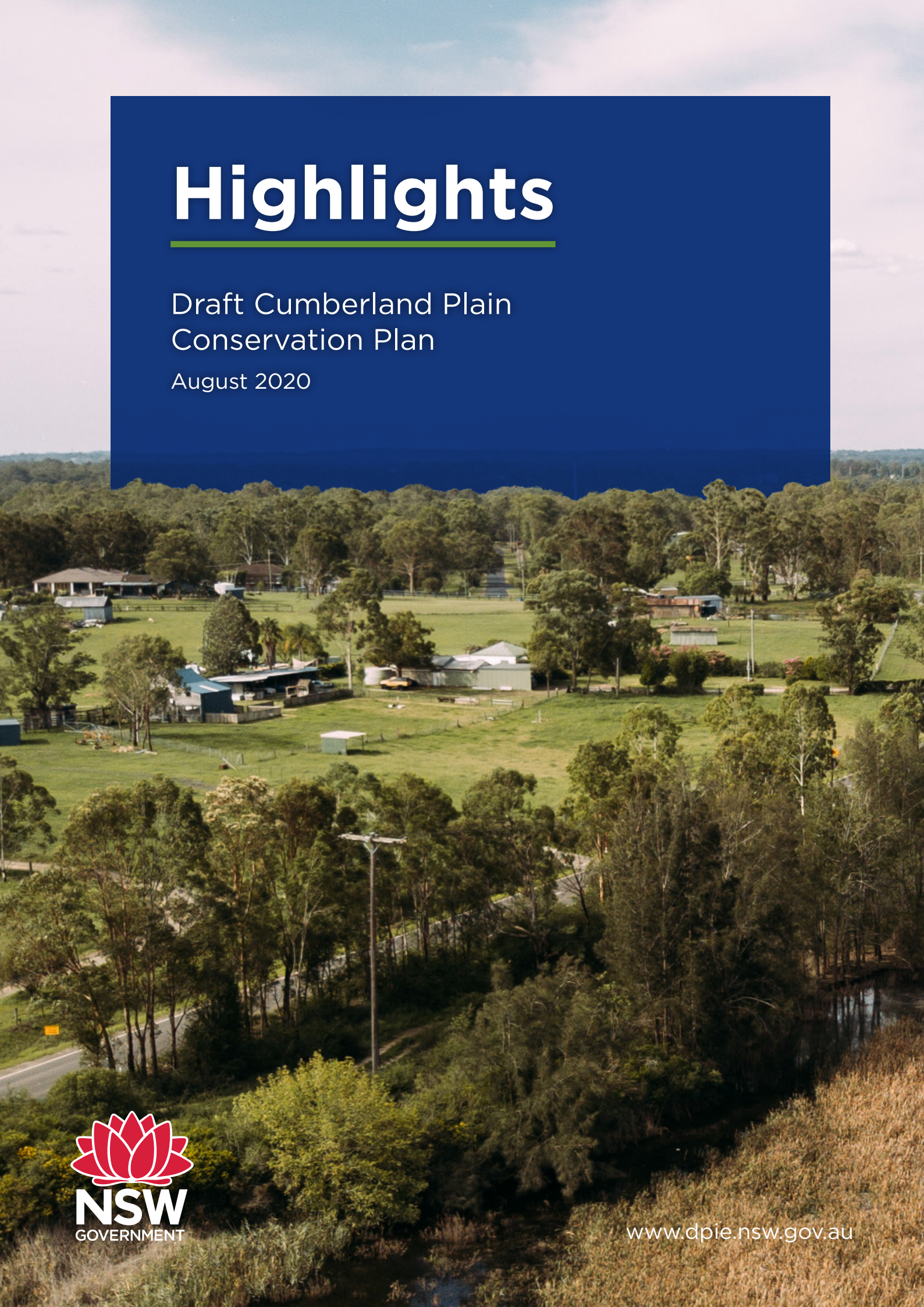
Highlights

Draft Cumberland Plain Conservation Plan

August 2020



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Title: Highlights of the Draft Cumberland Plain Conservation Plan

Subtitle: A Conservation Plan for Western Sydney

First published: August 2020

Acknowledgements

Cover image: Rural land and remnant woodland near Pitt Town, Joshua Tredinnick, Department of Planning, Industry and Environment

Disclaimer

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Acknowledgement of Country

The development of the Cumberland Plain Conservation Plan acknowledges more than 60,000 years of continuous Aboriginal connection to the land that makes up NSW.

This Plan recognises that, as part of the world's oldest living culture, traditional Aboriginal and Torres Strait Islander owners and custodians of the Australian continent and adjacent islands share a unique bond to Country—a bond forged through thousands of years of travelling across lands and waterways for ceremony, religion, trading and seasonal migration.

Aboriginal peoples maintain a strong belief that if we care for Country, it will care for us. The area covered by the Cumberland Plain Conservation Plan is cared for by three Aboriginal groups: the Darug, Dharawal and Gundungurra. Others, such as the Eora, Darkinjung, Wiradjuri and Yuin maintain trade or other obligatory care relationships with the area. The Deerubbin, Gandangara and Tharawal Local Aboriginal Land Councils also have local land holdings and responsibilities towards Aboriginal peoples living in the area.

This significant connection to Country has played an important part in shaping this Plan.

For Traditional Owners, Country takes in everything within the physical, cultural and spiritual landscape—landforms, waters, air, trees, rocks, plants, animals, foods, medicines, minerals, stories and special places. It includes cultural practice, kinship, knowledge, songs, stories and art, as well as spiritual beings, and people: past, present and future.

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Have your say

We want your feedback on the Draft Cumberland Plain Conservation Plan (the Plan).

The Plan comprises a conservation program with commitments and actions to achieve the Plan's vision, objectives and outcomes.

The Plan has been informed by our scientific assessments and what we've heard through many collaborative forums. We worked with the Cumberland Plain Conservation Plan Community Reference Group and the People's Panel to support the Plan's development.

We also met community members and stakeholders during drop-in sessions, workshops and meetings as part of a six-month early engagement process in 2019, as well as engaging with people through online tools and social media. This feedback helped shape the Plan, and we're now seeking formal submissions on the Plan.

You can find further information on the process and how to make a submission on the website.

We will consider feedback gathered from the submissions when finalising the Plan.

Snapshot

Delivering the conservation program to 2056

Secure 5,475 hectares of native vegetation within new conservation lands to offset development

Secure 1,885 hectares of koala habitat through the newly established Georges River Koala Reserve

Creation of new reserves and extension of existing reserves

Biodiversity stewardship agreements will be established with landowners

Ecological restoration for up to 25% of the new conservation land target

Implement strategies to manage landscape threats such as fire, weed invasion, pest animals and disease

Research programs to directly support the Plan's key conservation commitments

Education and engagement programs to raise awareness of biodiversity conservation

10-year strategy to promote and support economic opportunities and Caring for Country for Aboriginal communities

Introduce development controls specific to protecting biodiversity

An evaluation program will be developed to ensure success of the Plan

Introduction

The Western Parkland City is projected to grow from 740,000 people in 2016 to 1.1 million by 2036, and to well over 1.5 million by 2056. A thriving, liveable Western Parkland City must be well planned to meet that growth. It should include dedicated areas to protect the many unique native plants and animals in the region, and publicly accessible, open and green spaces that local communities can enjoy.

The NSW Department of Planning, Industry and Environment has undertaken strategic conservation planning to develop the Draft Cumberland Plain Conservation Plan (the Plan). The Plan will support biodiversity and growth in the Western Parkland City by protecting the region's important conservation values. It will do this through the creation of new reserves, conservation areas and green spaces for the local community.

The Plan has a conservation program designed to improve ecological resilience and function, and to offset biodiversity impacts from new housing, employment areas and infrastructure in the Western Parkland City. Taking a landscape approach will deliver the greatest safeguards for Western Sydney's natural environment over the long term.

This document provides an overview of the Plan's context and presents the highlights of the conservation program that will be delivered over the life of the Plan.

Top: Casuarina seed pods are a food source for threatened cockatoos

Photography:
Ingleburn Dam at Emerald Hills, Joshua Tredinnick/DPIE

Conservation values in the Western Parkland City

The Plan Area covers approximately 200,000 hectares from north of Windsor to south of Picton, and from the Hawkesbury—Nepean River in the west to the Georges River near Liverpool in the east.

The Western Parkland City is home to a rich variety of plants and animals and their habitats. This includes, among others, the Cumberland Plain Land Snail; foraging habitat for the Swift Parrot; and significant plants such as the Nodding Geebung and Spiked Rice-flower. The Southern-Sydney koala population is the largest koala population in Sydney and is one of the only chlamydia-free koala populations in NSW.

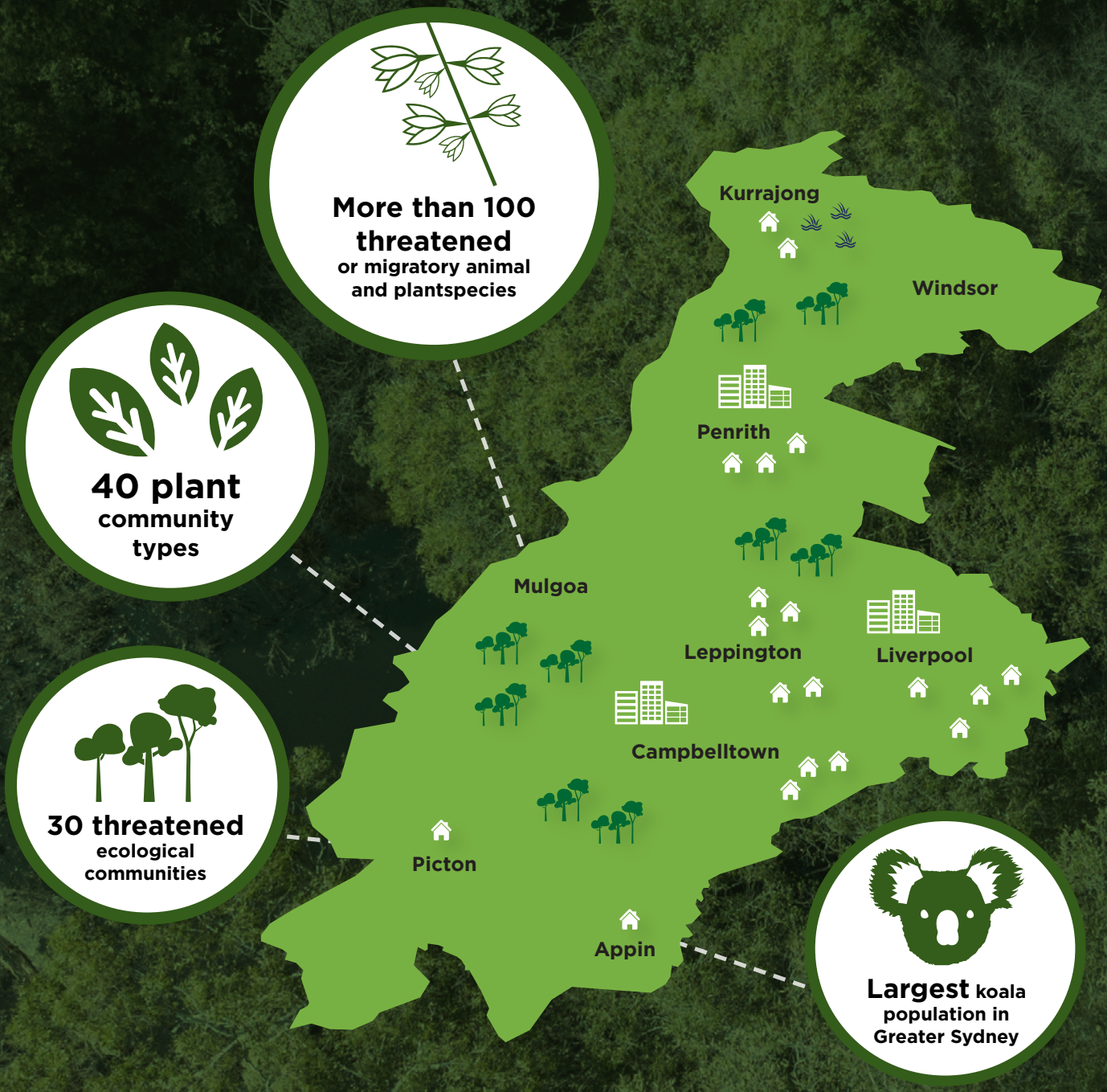
Native vegetation in the Western Parkland City has been, historically, cleared for agriculture and more intensive land uses, resulting in extensive fragmentation of the remaining native vegetation, reduced connectivity and overall loss of ecological resilience. As of today, approximately 10% of the remaining native vegetation in the area covered by the Plan is protected within a public reserve or through a biodiversity agreement.

200,000
Hectares covered by the Plan Area

10%
Native vegetation currently protected

Photography:
Remnant woodland near Appin, Joshua Tredinnick/DPIE

Conservation values in the Plan Area



68 hectares of wetlands of national importance

680 kilometres of waterways 3 catchment areas

200,000 ha Plan area

Delivering the Western Parkland City

The Western Parkland City is being established on the strength of the new Western Sydney International (Nancy-Bird Walton) Airport and Western Sydney Aerotropolis. It will be a city with multiple centres, capitalising on the established centres of Liverpool, Greater Penrith and Campbelltown–Macarthur.

The Plan will support the vision of the Western Parkland City, which is to protect and enhance bushland and biodiversity through the creation of new conservation lands such as public reserves. This will ensure the Western Parkland City is a liveable place where people can easily access and enjoy nature and green spaces. The planning context for the Plan is shown in Figure 1.

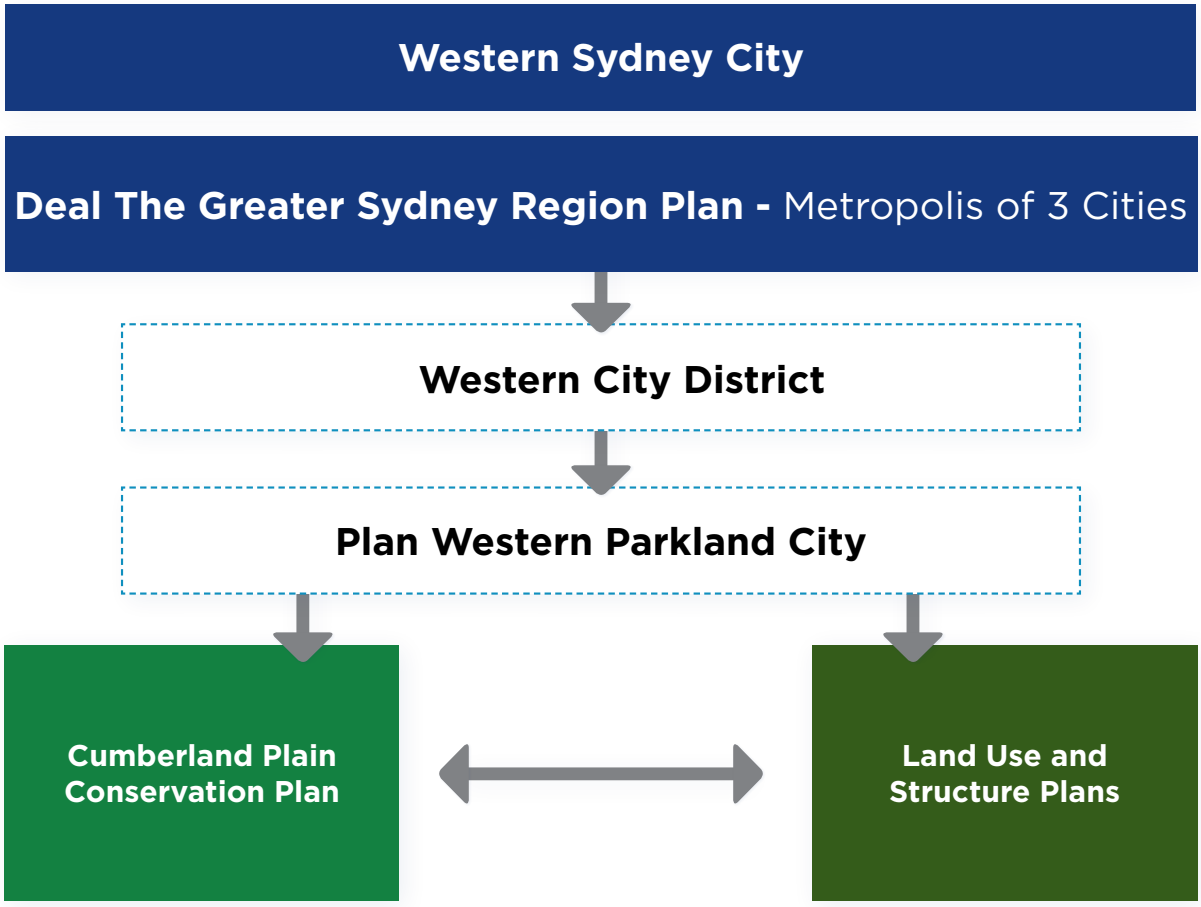


Figure 1. Planning context for the Plan

Western Sydney City Deal

The Australian Government, the NSW Government and eight Western Sydney councils signed the Western Sydney City Deal in March 2018. Under the deal, the NSW Government committed to delivering 185,000 new homes over the next 20 years. This is consistent with targets in the Western City District Plan, while also progressing a streamlined environmental assessment process to reduce duplication between the NSW and Australian governments.

Greater Sydney Region Plan and Western City District Plan

The *Greater Sydney Region Plan: A Metropolis of Three Cities* is a 40-year vision for a global metropolis of three cities incorporating land use, transport and infrastructure planning.

The Greater Sydney Region Plan is guided by 10 overarching directions and 40 objectives for liveability, sustainability, productivity and infrastructure in Greater Sydney. Two core directions address sustainability and provide planning objectives that inform the Plan:

- Objective 26—A cool and green parkland city in the Wianamatta (South Creek) corridor
- Objective 27—Biodiversity is protected, urban bushland and remnant vegetation is enhanced.

This Plan supports the implementation of the Greater Sydney Commission's Greater Sydney Region Plan for a Western Parkland City and the *Western City District Plan's* liveability planning priorities for:

- Planning Priority W13—creating a Parkland City urban structure and identity, with Wianamatta (South Creek) as a defining spatial element
- Planning Priority W14—protecting and enhancing bushland and biodiversity
- Planning Priority W16—protecting and enhancing scenic and cultural landscapes.

Focus areas for new development in the Western Parkland City

This Plan facilitates the delivery of four nominated areas for urban development in the Western Parkland City. These nominated areas will be the key focus for development to 2056 and the centres of economic activity in Western Sydney.

The nominated areas seeking approval through this Plan under the *Biodiversity Conservation Act 2016 (NSW)* and *Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)* (see Figure 2) are:

- Greater Macarthur Growth Area
- Greater Penrith to Eastern Creek Investigation Area
- Western Sydney Aerotropolis
- Wilton Growth Area.

This Plan excludes areas of the Western Sydney Aerotropolis that overlap with the South West Growth Area, the Western Sydney International Airport and the eastern part of Mamre Road Precinct (see Figure 2).

The Plan plays a critical role in avoiding impacts to biodiversity and informing land use planning for developments at strategic, precinct and local levels in each nominated area. Structure plans provide a line of sight from the Greater Sydney Region Plan to planning at a precinct level. They also identify areas of important biodiversity values and contain precinct planning principles, including for biodiversity considerations.

Western Sydney major infrastructure corridors

The NSW Government's Future Transport 2056 identifies a series of major infrastructure corridors for the coming decades. For Western Sydney, major transport infrastructure is planned to respond to local needs over the next 40 years. Responsibility for developing and delivering transport infrastructure rests primarily with the NSW Government, specifically Transport for NSW and Sydney Metro.

This Plan will facilitate the delivery of the following key infrastructure corridors in Western Sydney (see Figure 2):

- Metro Rail future extension to Macarthur (excluding areas within the South West Growth Area)
- the Western Sydney Freight Line corridor
- the Outer Sydney Orbital between Box Hill and the Hume Motorway near Menangle
- the M7/Ropes Crossing Link Road.

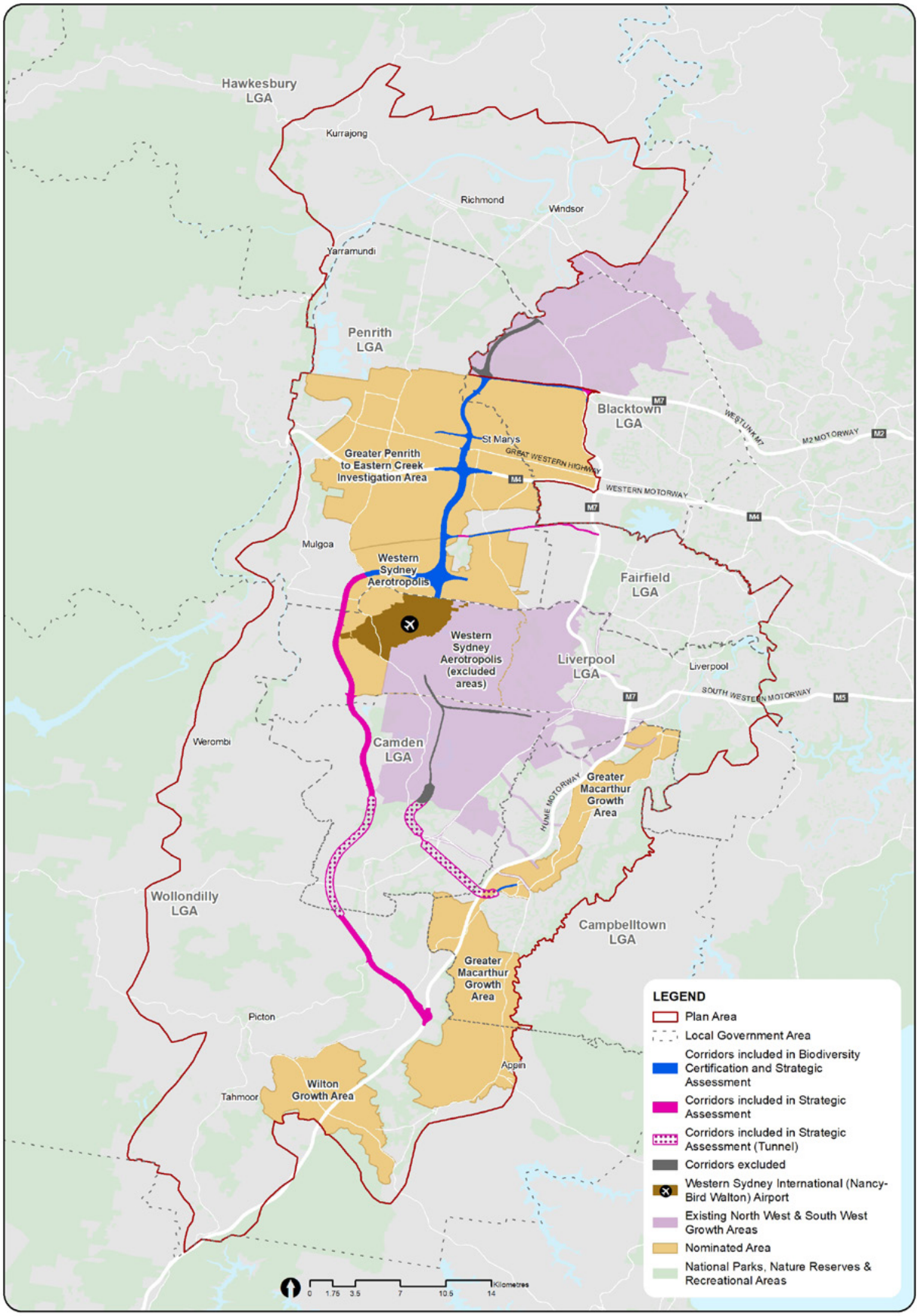


Figure 2. Draft Cumberland Plain Conservation Plan Area and scope

Some major corridors identified for Western Sydney in Future Transport 2056 are excluded from the Plan and their biodiversity approvals will be sought through alternative approval pathways. This includes the Sydney Metro Greater West line north of Western Sydney International (Nancy-Bird Walton) Airport, and major infrastructure corridors identified within existing north-west and south-west growth areas.

Premier's Priorities

The Premier's Priorities represent the NSW Government's commitment to significantly enhancing the quality of life of the people of NSW. The Plan plays an important role in helping to deliver two priorities:

Greening our city—increase the tree canopy and green cover across Greater Sydney by planting 1 million trees by 2022

Greener public spaces—increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 10% by 2023.

The Plan will contribute to these by establishing conservation lands such as public reserves and through ecological restoration, increasing canopy cover and providing quality green and open spaces for local communities.

Photography:
Western Sydney Dry Rainforest, Joshua Tredinnick/DPIE

Overview of the Plan

Strategic conservation planning in Western Sydney

Strategic conservation planning is an approach to assessing and conserving biodiversity upfront early in the planning process for large-scale development, to ensure our unique and diverse plants and animals are protected.

Strategic conservation planning enables decision-makers to identify and protect the most important areas for plants and animals while identifying areas suitable for development for housing and infrastructure for local communities.

The Plan has been prepared to meet requirements for strategic biodiversity certification under the NSW *Biodiversity Conservation Act 2016* and strategic assessment under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*

The Cumberland Plain Conservation Plan

The Plan Area includes parts of eight local government areas—Wollondilly, Camden, Campbelltown, Liverpool, Fairfield, Penrith, Blacktown and Hawkesbury.

The Plan's vision is to 'support Western Sydney's biodiversity and growth'. This means it will support the delivery of infrastructure, housing and jobs for Western Sydney in a planned and strategic way that protects and maintains important biodiversity.

The Plan will deliver commitments and a series of planned and managed actions designed to improve ecological resilience and function, and offset biodiversity impacts from housing and infrastructure development. Taking a landscape approach will deliver the greatest safeguards for Western Sydney's natural environment over the long term.

The Plan will deliver long-term conservation outcomes to the Western Parkland City by avoiding and/or protecting important biodiversity in areas for new development and in infrastructure corridors. Outside those areas, it will ensure outcomes through new or additions to public reserves such as national parks, investing in biodiversity stewardship sites on privately owned land, and ecological restoration of native vegetation.

This Plan represents one of the largest strategic conservation planning exercises ever undertaken in Australia and will provide an enduring conservation legacy for Western Sydney. It is also the first strategic biodiversity certification to be undertaken under the NSW *Biodiversity Conservation Act 2016*.

Components of the Plan

This Plan comprises six documents (plus this highlights document) (see Figure 4) that together play a key role in ensuring the success of strategic conservation planning for Western Sydney:

1. **The Draft Cumberland Plain Conservation Plan** describes where development will occur and how impacts to biodiversity values protected under the *Biodiversity Conservation Act 2016* and the *Environment Protection and Biodiversity Conservation Act 1999* will be addressed through the Plan's conservation program and implementation framework.
2. **Sub-Plan A: Conservation Program and Implementation** outlines how the conservation program will be implemented over the life of the Plan, including the Plan's evaluation program.
3. **Sub-Plan B: Koalas** outlines the conservation program for the local koala population, including protecting and connecting key areas of habitat.

4. **State Environmental Planning Policy for Strategic Conservation Planning:** The Explanation of Intended Effect (EIE) describes the planning measures and mechanisms that will support strategic conservation planning, including the Plan.
5. **The Draft Cumberland Plain Assessment Report** assesses the impacts of proposed development in the nominated areas and major transport corridors facilitated by the Plan. It also evaluates the adequacy and acceptability of the Plan, ensuring it is in accordance with the regulatory requirements of the NSW *Biodiversity Conservation Act 2016* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
6. **The Summary Assessment Report** is a high-level summary of the Draft Cumberland Plain Assessment Report. It also includes an overview of the report including impacts and evaluation of the Plan.

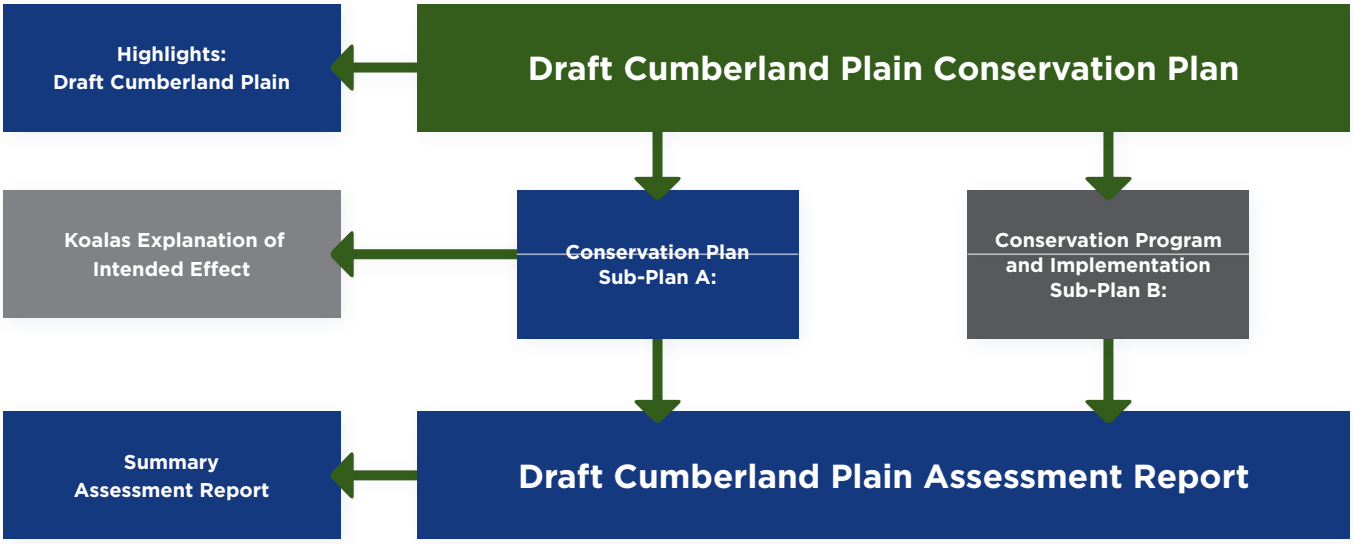


Figure 3. Components of the Plan

The Plan's conservation program

The Plan's conservation program comprises 28 commitments. They fall into five categories that address impacts to biodiversity from projected growth in Western Sydney, as identified through the Draft Cumberland Plain Assessment Report. The commitments will be implemented over the life of the Plan until 2056 and will be achieved through a series of planned and managed actions, according to priority and feasibility over time (see page 16).

The NSW Government has committed $84 million in the first five years to plant 100,000 trees to restore important koala habitat in the Georges River Koala Reserve, install 120 kilometres of koala exclusion fencing in priority locations and establish biodiversity stewardship agreements.

Within the first five years of the Plan's implementation, the NSW Government will prioritise the establishment of three new public reserves to help deliver the Plan's commitment of more than 5,475 hectares for new conservation lands. These new reserves are critical to the protection of threatened plants and animals in Western Sydney.

The establishment of the Georges River Koala Reserve has been announced as part of the Plan, and two additional public reserves are under investigation for feasibility. These are the:

- Gulguer reserve investigation area
- Confluence reserve investigation area.

Other locations within the strategic conservation area, such as Bargo, have also been identified for further investigation as future reserves to provide greater landscape connectivity.

Commitments to be delivered through the Plan

Category	Description
 **Avoiding and minimising impacts**	The Plan will avoid at least 4,315 hectares of valuable biodiversity from urban development using information collected during biodiversity assessments. These areas will be protected by environmental conservation zoning.
 **Mitigating indirect and prescribed impacts**	In addition to the direct impacts associated with clearing, development will cause indirect impacts to biodiversity. Indirect impacts are defined as those that occur beyond the development footprint from vegetation clearing and changes in land-use patterns. These include changes to hydrology and water quality, disruption of habitat connectivity, altered fire regimes, spread of disease and vehicle strikes of animals. The department will work with local councils to introduce development controls specifically to protect biodiversity and other key environmental features in the nominated areas from indirect and prescribed impacts.
 **Conserving flora, fauna and associated habitats**	These commitments will focus on establishing new conservation lands for in-perpetuity protection of biodiversity by securing new (or additions to) national parks, and council- or community-based biodiversity reserves, and establishing biodiversity stewardship sites on public or private land. Ecological restoration of native vegetation in conservation lands will play a critical role in expanding natural habitat and restoring connectivity in degraded areas. These commitments will make up 90% of conservation program funding over the life of the Plan.
 **Managing landscape threats**	Reducing and managing threats to the area's biodiversity in a strategic and coordinated manner will be essential for achieving the Plan's objective to improve long-term ecological function and resilience. The Plan will focus on managing weeds, pest animals and disease. Actions will also focus on fire management and adaptation to climate change.
 **Building knowledge and capacity**	Western Sydney has unique plants and animals, and many local groups and residents already help protect and manage important natural areas. Education will form an important part of the Plan and help ensure that current and future residents of Western Sydney know about and get an opportunity to help manage their unique local environment. Research will enhance our knowledge of threatened species while a compliance program will ensure effective management of biodiversity values.

Collaborating with the community and stakeholders

The department values input from stakeholders and the Western Sydney community. During the Plan's development, the department used a variety of engagement methods to better understand the views of the community and stakeholders—including what areas of biodiversity are important to them—and to obtain feedback during development of key elements of the Plan.

People's Panel

The department established the Cumberland Plain Conservation Plan People's Panel in 2018. The People's Panel was made up of 18 randomly selected community members—with at least two representatives from each local government area in the Plan Area.

The panel participated in a series of workshops and a bus trip around the Plan Area, where members were able to provide community views on the conservation program and how it should be implemented. This process provided the department with direct feedback from community members who may not have previously had a voice on NSW Government initiatives. The Panel's views have directly informed this Plan and its conservation program.

Community Reference Group

The department also established the Cumberland Plain Conservation Plan Community Reference Group in 2018. This group, chaired by the Total Environment Centre, was made up of expert representatives from a range of environmental, Aboriginal, landscape profession and scientific groups in Western Sydney.

The Community Reference Group provided independent advice to the department on the strategic conservation planning process, and input and advice to support the development of the Plan.

Early engagement with community and stakeholders

Between July and December 2019, the department engaged with the community and stakeholders to seek early feedback to support development of the Plan for statutory public exhibition. The department specifically sought feedback from the community on local conservation priorities, and how people value biodiversity and green spaces through an online survey and a social pinpoint map. This ensured that local and expert knowledge informed the Plan's content and conservation program.

The department also engaged with stakeholder groups though a series of workshops and meetings, including Local Aboriginal Land Councils, local councils, state and Australian government agencies, industry groups and peak bodies, environment groups, developers and landholders in the nominated areas. Feedback from early engagement was considered in preparing the Plan.

The full report on the community engagement process, including what we heard, is available on the department's website.

Plan highlights

The following sections provide seven Plan highlights from the suite of commitments and actions proposed under the conservation program.

1. Establishing new conservation lands

The conservation program will secure at least 5,475 hectares of native vegetation.
This will offset native vegetation that is cleared for urban development and transport infrastructure.

New conservation lands will protect Western Sydney's threatened plants and animals and native vegetation to enhance long-term resilience and ecological function. In-perpetuity protection of biodiversity will be achieved through establishing new or adding to existing public reserves such as national parks, and by establishing biodiversity stewardship sites.

The conservation program will prioritise sites in the strategic conservation area to establish new conservation lands over the life of the Plan (see Figure 4). The strategic conservation area is identified as having the greatest potential to deliver long-term conservation outcomes for biodiversity in the Plan Area. It includes large patches of native vegetation with good connectivity to other such patches, or areas with the potential to enhance connectivity that directly offset impacts on threatened plants and animals. The strategic conservation area will be monitored over the life of the Plan and regularly refined as constraints and opportunities change.

Establishing new reserves

Public reserves are recognised as the foundation of biodiversity protection as they protect the largest and most intact remnants of vegetation in perpetuity. In addition to their biodiversity value, they provide social and wellbeing benefits to local communities by increasing access to nature and green spaces and protecting heritage. Feedback from the Western Sydney community during early engagement found a strong preference for public reserves to be delivered under the Plan.

Within the first five years of the Plan's implementation, the NSW Government will prioritise the establishment of three new public reserves. This will help deliver the Plan's commitment to secure at least 5,475 hectares of native vegetation in new conservation lands. The establishment of the Georges River Koala Reserve has been announced as part of the Plan. Two additional public reserves are under investigation for feasibility, including the Gulguer reserve investigation area and the Confluence reserve investigation area (see case studies 1 and 2). Other locations within the strategic conservation area have also been identified for further investigation as future reserves to provide greater landscape connectivity such as Bargo.

These reserves may be national parks, nature reserves, state conservation areas or regional parks managed by the NSW National Parks and Wildlife Service, council reserves or community-based reserves. New reserves could also be managed jointly with Local Aboriginal Land Councils.

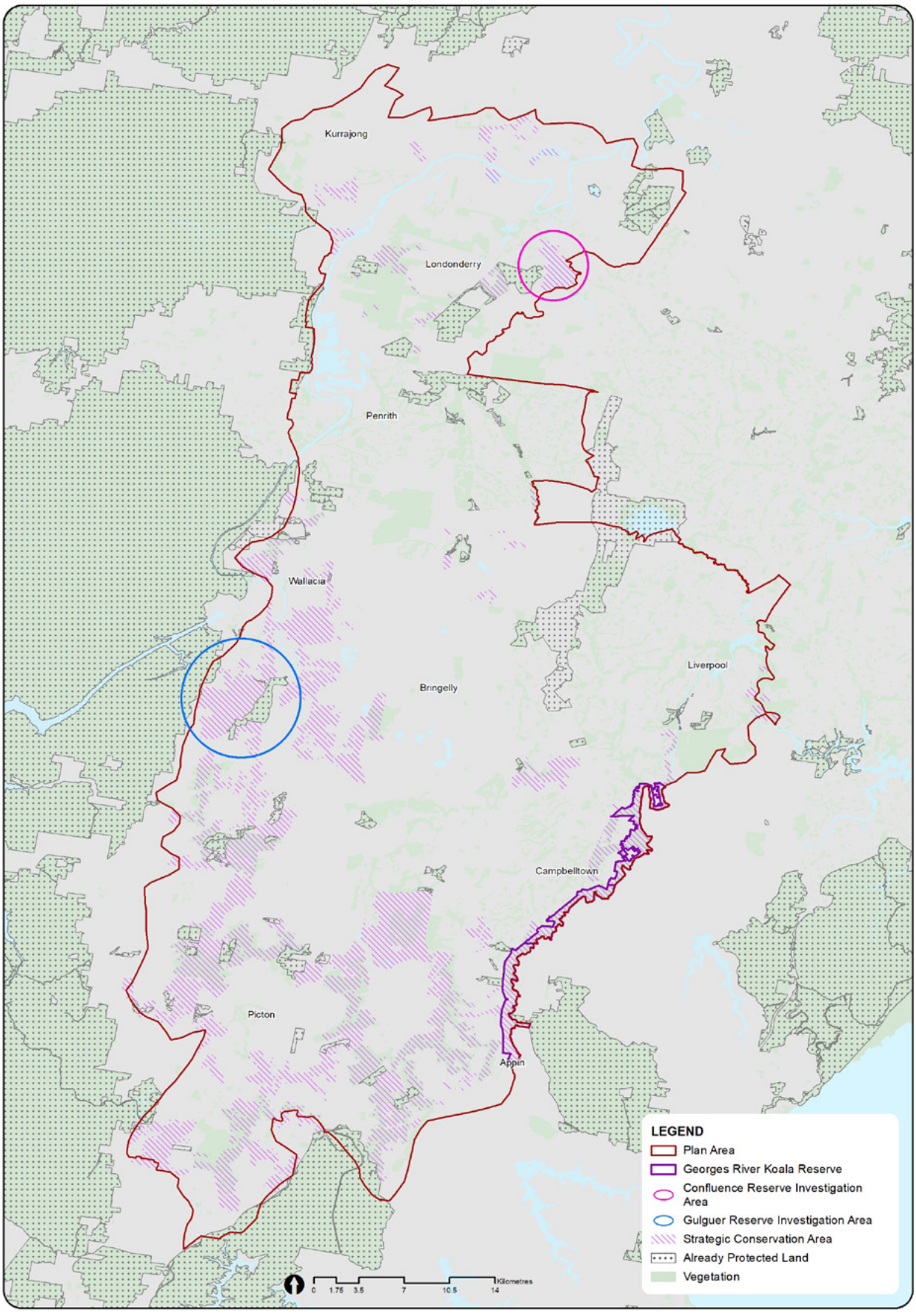


Figure 4. Western Sydney strategic conservation area and reserve investigation areas

Case study 1: The Gulguer reserve investigation area

The Gulguer reserve investigation area covers about 1,800 hectares in the Wollondilly local government area (see Figure 4). The reserve investigation area will support the east-west connection between Burragorang State Conservation Area and Gulguer Nature Reserve and relieve the highly visited Bents Basin State Conservation Area.

Vegetation within the investigation area includes ecological communities listed as threatened under both the NSW *Biodiversity Conservation Act 2016* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, including approximately 585 hectares of shale–sandstone transition forest and 180 hectares of Cumberland Plain woodland.

The area is potential habitat for known species and key Matters of National Environmental Significance targeted in the Plan's conservation program, including around 1,165 hectares for the Swift Parrot and the Regent Honeyeater, and 780 hectares for the Cumberland Plain Land Snail.

Photography:
Nepean River at Bents Basin,

Establishing new stewardship sites

A biodiversity stewardship agreement is an agreement between the Biodiversity Conservation Trust and a landholder to protect the biodiversity on their land in perpetuity. More than 75% of the remaining native vegetation in the Cumberland subregion is on private land and as such biodiversity stewardship agreements will play an important role in protecting biodiversity into the future.

Establishing biodiversity stewardship sites on private land is useful in areas where land management is fragmented, such as in Western Sydney. Stewardship sites can offer opportunities to expand the range of protected biodiversity values while providing buffers and corridors to already protected areas.

A landholder voluntarily enters into the biodiversity stewardship agreement and manages the area according to an agreed management plan. The biodiversity stewardship agreement is registered on the title of the property and provides in-perpetuity protection of the site's biodiversity values, while giving the owner a secure, ongoing source of funding.

Delivering targeted ecological restoration

Historically, vegetation in the Plan Area has been cleared for agriculture and more intensive land uses, resulting in extensive fragmentation of the remaining native vegetation and reduced connectivity.

Ecological restoration can play a vital role in improving connectivity between disconnected patches of vegetation, expanding the area of remnant habitat and re-establishing over-cleared vegetation communities.

This conservation program will build on the restoration efforts and techniques already occurring in the Plan Area, with up to 25% of the targeted 5,475 hectares of native vegetation to be delivered through ecological restoration of threatened native vegetation. Areas identified as a priority for conservation will be assessed to identify ecological restoration opportunities. Restoration will aim to expand the habitat available for threatened species and create greater connectivity with neighbouring reserves and other areas of high biodiversity value.

Case study 2: The Confluence reserve investigation area

The Confluence reserve investigation area covers about 600 hectares in the Hawkesbury local government area (see Figure 4). The site has been identified as a potential area for conservation and ecological restoration efforts due to its proximity to several existing nature reserves, thus improving local connectivity.

The area provides a significant ecological restoration opportunity, with up to 365 hectares of cleared land targeted for restoration. Communities likely to be restored include Cooks River/Castlereagh ironbark forest, River-Flat eucalypt forest and Cumberland Plain woodland.

The area is also a potential habitat to known species that have been targeted for conservation efforts under the Plan, including around 65 hectares for *Pultenaea parviflora*, a species that is listed as a Matter of National Environmental Significance under Commonwealth legislation, and around 65 hectares for the Swift Parrot.

Photography: Swift Parrot, Dave Watts/DPIE

2. Protecting koalas in Western Sydney

Koala numbers are in decline in NSW, and koalas in Campbelltown local government area are one of the healthiest populations in NSW.

The Plan aims to ensure that the Southern-Sydney koala population can continue to grow and thrive.

Protecting and enhancing important koala habitat

The conservation program was developed based on advice from the NSW Deputy Chief Scientist & Engineer, released in August 2020 in an independent expert panel report, *Advice on the protection of the Campbelltown koala population* (Chief Scientist Koala Report). The conservation program for koalas will establish new conservation lands such as reserves and biodiversity stewardship agreements on private land holdings to protect important koala habitat in perpetuity. Ecological restoration of the habitat will also aim to expand the area's native vegetation and maximise ecological connectivity for koalas.

In the first five years of delivering the conservation program, the NSW Government will plant 100,000 trees to restore important koala habitat in Georges River Koala Reserve, along Ousedale Creek, around

Appin and other priority locations.

River Koala Reserve

The conservation program will establish the Georges River Koala Reserve in the first 10 years of implementation of the Plan. This reserve will protect the most important north–south koala movement corridor along the Georges River between Appin and Kentlyn (see Figure 4). This north–south corridor has high-fertility shale and shale-influenced transition soil that supports preferred koala feed trees.

The establishment of the Georges River reserve was recognised in the Chief Scientist's Koala Report as essential to the persistence of the Southern-Sydney koala population.

The reserve will protect and manage up to 1,885 hectares (including ecological restoration), which is three times the required offset target for important koala habitat for the Plan. Some 800 hectares of publicly owned land was announced in November 2018 to be set aside as part of the reserve. There is also an opportunity to restore up to 200 hectares of important koala habitat within the reserve.

Mitigating key threats

Indirect and prescribed impacts to koala populations are often associated with human-induced disturbances, such as through urbanisation. Some of the key urban development threats for koalas are fragmentation of habitat, domestic dog attack, vehicle strikes and drowning in swimming pools.

As part of the Plan, 120 kilometres of koala-exclusion fencing will be installed between koala habitat and the urban capable land to protect koalas from urban-related threats. It will also be installed along Appin Road to mitigate vehicle strike for koalas. As part of the Plan, the department has prepared model clauses for development control plans to address threats related to pre-construction, translocation, site management, precinct and road design for nominated areas, and these will be adopted as the precinct plans are developed.

Supporting koala welfare

The conservation program will deliver education and a targeted stakeholder and community engagement program to build awareness among residents about koala conservation and key threats. Research will enhance our knowledge of koalas, allow for conservation initiatives and monitor populations as development occurs in Western Sydney.

The Plan will fund training and technical resources needed by wildlife carers and veterinarians through the NSW Koala Strategy and their NSW Volunteer Wildlife Rehabilitation Sector Strategy. Funding will improve access to resources, veterinary services, transport and facilities for the Southern-Sydney koala population.

3. Protecting plants and animals through planning measures

The primary method of protecting threatened plants and animals is establishing conservation lands. But planning controls are also being used to identify and protect areas of strategic conservation value for the region, which will be critical to the implementation of the Plan.

A proposed state environmental planning policy (SEPP) is the key statutory mechanism to protect threatened plants and animals under the Plan.

To protect avoided land, controls include:

- a requirement to ensure consistency between the urban capable land in precinct plans and the areas of certified land identified by the Plan
- applying environmental conservation (E2) zoning to protect avoided land identified under the Plan, including land with high-value biodiversity, riparian corridors and steep slopes
- requiring public authorities to avoid, minimise, mitigate and offset impacts to biodiversity when undertaking essential infrastructure development on certain land in the nominated areas.

To manage impacts to the strategic conservation area, controls include:

- requiring the consent authority to consider biodiversity values when determining development applications on the strategic conservation area, to minimise impacts to this land that has high biodiversity value, important connectivity or ecological restoration potential.

To help secure future conservation land to implement the Plan, the Plan proposes:

- acquisition clauses to help secure suitable conservation lands for new public reserves or national parks. Any land acquisition is subject to funding and consultation with community and key stakeholders.

Development controls to protect biodiversity

Development of the nominated areas and major transport corridors will have indirect and prescribed impacts on biodiversity. Indirect impacts are those occurring beyond the development footprint, such as vegetation clearing, changes to hydrology and water quality, disruption of habitat connectivity, altered fire regimes, spread of disease, and vehicle strikes of animals. Prescribed impacts are impacts or potential impacts to habitat features (such as caves and cliffs, rocks, man-made structures and non-native vegetation) as well as impacts on habitat connectivity, threatened species movement, water bodies and water-related processes that sustain threatened species.

Development controls are needed to avoid, mitigate or minimise the indirect and prescribed impacts associated with increased urbanisation and growth. Development control plans (DCPs) provide detailed planning and design guidance to support statutory instruments and guide development. Councils assess development applications in accordance with the relevant DCPs.

The DCPs prepared for each nominated area will include objectives and controls to address the threats identified in the Plan and guide the protection of biodiversity. The department has prepared model clauses for DCPs to address threats and protect biodiversity and other key environmental features in the nominated areas and will work with local councils to implement these development controls.

Growth Area

Mitigation controls were developed for risk and threats to biodiversity in Wilton using a scientifically grounded, species-based method. These were drafted as development controls and included in the comprehensive DCP to address threatened ecological communities, species and their habitats in the Wilton Growth Area.

Biodiversity controls were directly integrated into the precinct planning process for Wilton Growth Area and through the draft Wilton DCP. These controls inform the protection of biodiversity and address species and threatened ecological communities including both direct and indirect threats to biodiversity in Wilton Growth Area.

These Wilton-specific objectives and controls were reviewed by council and are designed to improve biodiversity outcomes, guide neighbourhood planning and minimise indirect and prescribed impacts in Wilton Growth Area.

Photography:
Koala fencing on Appin Road,
Joshua Tredinnick/DPIE

4. Managing landscape threats

Increasing urbanisation raises the number and extent of threats to biodiversity, such as habitat loss, weed invasion, pest animals and disease. Climate change is also a serious threat to native species and ecosystems. Reducing and managing threats to the area's biodiversity in a strategic and coordinated manner will be essential for achieving the Plan's objective of improving ecological function and creating resilience to a changing climate.

Managing fire to protect biodiversity

Fire is a natural element of the ecology of most Western Sydney vegetation communities. A vegetation community's responses to fire can be influenced by fire frequency, temperature, season, prior and subsequent weather conditions, and proximity to unburnt refuge areas.

The 2019–20 bushfires in NSW were unprecedented in their extent and intensity. As of late January 2020, the fires had burnt 5.3 million hectares (6.7% of NSW), including 2.7 million hectares in national parks (37% of the national park estate) and more than 80% of the Greater Blue Mountains World Heritage Area.

The conservation program will manage fire in strategic locations in Western Sydney to support the maintenance of biodiversity values on new conservation lands such as reserves. It will also help to minimise bushfire risks to people and property from adjacent native vegetation through measures such as hazard reduction and appropriate land management.

Case study 5: Delivering a fire management strategy

The conservation program includes an action for the department to develop and implement a fire management strategy. This must align with the fire strategies of the NSW National Parks and Wildlife Service and the NSW Rural Fire Service to protect biodiversity values, property and people. This strategy aims to manage fire regimes in existing and new conservation lands, such as national parks and reserves, to maintain and enhance biodiversity over time.

A range of fire management strategies will be developed for each new nominated area in Western Sydney, including for fuel reduction, fire trails and detection, and for cooperative arrangements. Where urban boundaries and conservation lands abut, fuel reduction programs and fire trail maintenance will be designed and implemented in consultation with relevant stakeholders to best protect life, property, and natural and cultural assets.

Providing support for climate change mitigation

Climate change is a serious threat to native species and natural ecosystems and is expected to be an ongoing challenge to effective conservation in Western Sydney. Increasing extreme heat as a result of a changing climate, combined with changes to bushfire and rainfall patterns, are likely to place additional pressure on Western Sydney's biodiversity.

The Plan will support existing and new conservation programs to help threatened species and ecological communities adapt to the impacts of climate change in Western Sydney by:

- filling knowledge gaps on climate change adaptation measures for biodiversity
- including priority locations in the strategic conservation area (if they are not already present) to support adaptation of biodiversity to climate impacts
- providing advice and support to councils to integrate the results of research, including identification of any important climate refugia, in their reserve management programs.

Managing feral animals, weeds and disease

Feral animals, weeds and diseases have numerous adverse effects on native plants and animals in the Plan Area, including weakening or killing species, predation, overgrazing and competition. The conservation program includes actions for delivery partners, such as Local Land Services, local councils and Landcare groups, to reduce these landscape threats by:

- reducing key weed species on conservation lands established under the Plan
- applying a strategic approach to eradicating pest animals
- identifying conservation programs that contribute to the management of disease and dieback
- preparing a 'disease control implementation strategy'.

5. Building our knowledge through research

Despite substantial research into understanding the ecology of Western Sydney, many areas remain where further research will help us better manage threatened plants and animals. The Plan will play an important role in facilitating this work.

Research to support the conservation program

The Plan will include research that will underpin the adaptive management needed to achieve the environmental outcomes. Research programs will cover topics such as:

- the adaptive potential of threatened species and ecological communities to climate change
- improved techniques for restoring threatened ecological communities
- biodiversity threats
- land use impacts
- threatened species conservation
- behavioural science, and
- connections between biodiversity and Aboriginal culture and practices in Western Sydney.

Knowledge and data gathered through research will directly support the implementation of each of the Plan's key conservation commitments. They will also help improve ecological knowledge about the area's threatened species and ecosystems and our ability to monitor plant, animal and community responses to our efforts.

Case study 6: Threatened species ecology and distribution

The Plan will include a five-year research program that will target threatened species in Western Sydney. This research program will be implemented through the NSW Government's existing Saving our Species program. The species selected for research will include those that have been assessed to be affected by future urban development and infrastructure.

The research program will aim to improve our understanding of the habitat requirements of species, the geographic distribution of species, and responses to changing land use and climate.

Photography: Spotted-tailed Quoll, Lachlan Hall/DPIE

6. Partnering with the Aboriginal community

Aboriginal people have managed, cultivated and cared for Country for more than 60,000 years. Aboriginal people hold profound knowledge, understanding, obligation and custodianship of the landscape, often referred to as 'connection to Country'.

Through connection to Country, Aboriginal people have developed their own systems of knowledge and understanding of their surrounding ecology and biodiversity, which is representative of a living, symbiotic relationship with the land and waters of their traditional homeland estates. This includes widespread systems of knowledge incorporating biodiversity, climate, land, culture and people.

The aims and objectives of the Plan are aligned with Aboriginal understanding of and respect for the land. They aim to ensure land management, planning and land use in Western Sydney improves ecological resilience and meets social, economic and liveability needs.

Aboriginal people of Western Sydney

Western Sydney has the largest concentration of Aboriginal people in Australia, with many families originating from areas across NSW and throughout Australia.

Local Aboriginal Land Councils, including Tharawal, Deerubbin and Gandangara, are major landowners in local government areas within the Plan Area. They are responsible for achieving the social, cultural and economic aspirations of Aboriginal people through those land holdings. Planning controls proposed in the Plan for the strategic conservation area and the environmental conservation zone will not be applied to any land owned or under claim by Local Aboriginal Land Councils in the Plan Area.

Engaging and partnering with Aboriginal people

The department started engaging on the Plan with Local Aboriginal Land Councils and the Aboriginal community in Western Sydney in 2018.

The feedback through this engagement has supported actions in the Plan and a decision to develop a 10-year Aboriginal engagement and implementation strategy for Western Sydney as part of the Plan. The department will continue to work with Local Aboriginal Land Councils and Western Sydney's Aboriginal community to collaboratively develop this strategy.

The strategy will outline opportunities for targeted and ongoing engagement with the local Aboriginal community to promote and support opportunities arising from the Plan, such as jointly managing new conservation reserves. It could also support resolving Aboriginal land claims over potential conservation lands, upfront funding to help establish biodiversity stewardship sites on Aboriginal-owned land and acknowledging culturally and environmentally significant lands in Western Sydney.

Case study 7: Build capacity in Aboriginal businesses and organisations

One of the objectives of developing a 10-year Aboriginal engagement and implementation strategy is to build capacity in Aboriginal businesses and organisation to help deliver the Plan.

The strategy could fund grants to provide support for existing Aboriginal-owned businesses or startup funding to get new businesses off the ground in the land management and restoration sector. The department will award a minimum of 5% of expenditure for services needed for implementation of the Plan to Aboriginal-owned businesses. This is 2% above the current quota under the NSW Government's Aboriginal Procurement Policy.

The department could also work with Local Aboriginal Land Councils and Aboriginal businesses to investigate training opportunities that will help to achieve the Plan's conservation outcomes. For example, training could be provided for Biodiversity Assessment Method assessor accreditation and for ecological restoration and Indigenous land use practitioners.

7. Involving the community in conservation

The conservation program will include a range of actions that aim to raise awareness of biodiversity values and issues and encourage people to participate in biodiversity conservation. An effective education and engagement program will support the outcomes of the Plan by fostering a greater understanding of the environment in which Western Parkland City residents live, and the unique biodiversity values it supports.

Community education and engagement

Early engagement for the Plan showed that many long-term residents are very aware of Western Sydney's biodiversity values and the importance of protecting them. With an extra 700,000 people living in Western Sydney by 2056, it will be important to educate new and existing communities about how they can protect biodiversity and support conservation in the Western Parkland City.

Case study 8: Biodiversity education officers engage with community and schools

The conservation program will fund a network of biodiversity education officers in local councils to directly engage with schools, community groups and the broader community to implement environmental programs and organise community events.

Two part-time Aboriginal education officers and three full-time biodiversity education officers will deliver biodiversity, cultural awareness and engagement activities to schools and communities.

This may lead to increased involvement in ecological restoration activities through Bushcare and Landcare, greater awareness of the value of having native species in gardens, increased interest and involvement in citizen science monitoring programs, and reduced rubbish dumping and damage from inappropriate recreational activities.

Photography: Nature appreciation, Joshua Tredinnick/DPIE

Residents will have opportunities to learn about the biodiversity of the Cumberland Plain and actively engage in conservation programs and activities. These will include participation in school education programs, and community activities such as tree planting, nature walks and citizen science programs.

One of the actions of the conservation program is to develop and implement an 'education and engagement implementation strategy'. The strategy will be developed in consultation with local councils, members of the community, the NSW Department of Education and other relevant stakeholders.

Extension services to property owners and land managers

The Plan will provide for extension services to community groups, local councils, Local Aboriginal Land Councils and landholders to support biodiversity conservation on public and private land. These services will enhance or complement existing programs and will aim to strengthen the conservation outcomes of the Plan. For example, supporting landholders to control weeds and feral animals on properties bordering conservation lands will help protect these areas from biodiversity threats.

Extension services or extension programs to be delivered under the Plan include:

- partnering with the Biodiversity Conservation Trust to promote stewardship options and biodiversity management on private land in the Plan Area
- partnering with Local Land Services and councils to deliver community workshops on managing weeds and feral animals
- supporting community groups working on public or private conservation lands by delivering training in best-practice bush regeneration and restoration techniques.

Next steps

Public exhibition

The Plan is now on public exhibition. We invite the community and stakeholders to make a submission on the Plan and other documents on exhibition.

We will consider all submissions when preparing the final Plan and publish a report summarising the feedback from the public exhibition.

Approval of the Plan

The department will review and, where necessary, update the mapping of urban-capable land and strategic conservation areas following feedback from the exhibition. We will then complete the final impact assessment to quantify the biodiversity impacts associated with the final urban-capable land.

We will submit the Plan and its associated documents to the NSW Minister for Environment for approval under the NSW *Biodiversity Conservation Act 2016* and to the Commonwealth Minister for Environment for approval under the Commonwealth *Environment Protection and Biodiversity Act 1999*.

How to contact us

The department is committed to engaging with the community and industry as we continue to deliver the Plan for protecting Western Sydney's biodiversity.

If you have any questions, you can email
biodiversity@planning.nsw.gov.au
or call **1300 305 695**.

dpie.nsw.gov.au