



**CUMBERLAND
COUNCIL**

Council Meeting

Wednesday, 17 July 2019 at 6:30pm

Additional Attachments

ADDITIONAL ATTACHMENTS

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<u>Director Environment & Planning</u>		
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DOCUMENTS
ASSOCIATED WITH
REPORT C07/19-149

Attachment 1

Cumberland Biodiversity Strategy
2019 - **Amended** Summary of
Public Submissions

Biodiversity Strategy 2019 - Summary of Submissions

In total, 4 submissions were received during the public exhibition period. Each of the 4 individual submissions contained numerous comments and suggestions. The following table summarises all comments and suggestions received.

Comments / Suggestions	Council response	Changes to Strategy
Submission 1		
<p>Dear Council, well done on the Draft Cumberland Biodiversity Strategy 2019. The strategy provides a high level insight into what is needed to support the development of sustainability initiatives. My recommendations:</p> <p>1. Locate and build partners in the community (particularly the majority Arabic and Chinese speaking) communities who care about the environment. See this resource and common myths for working with multicultural communities: https://engage.environment.nsw.gov.au/10002/documents/22549</p> <p>2. Local parks are places where you might have a planting of endangered species which were listed in the plan. We could trial a site next at the cnr of O'Neill St and Elizabeth Street Guildford and have a "adopt" a park with some nests for powerful owls, and provide some flowering trees (not just she oaks) for the local birds to eat etc... If there was some communication, a series of local groups may be interested in getting involved and supporting the restoration of local biodiversity. Activities could include having a night walk in a local park etc to see wildlife.</p> <p>3. Encourage people to plant street trees and support the NSW Department of Planning to increase the catchment of trees in our LGA. This could be a tangible indicator. https://www.planning.nsw.gov.au/Policy-and-Legislation/Open-space-and-parklands/5-million-trees</p>	<ol style="list-style-type: none"> 1. Council agrees with your comment to build partnerships with the community, paying attention to non-English speaking communities. Council recognises it has one of the most diverse communities in NSW. Council has and will continue to focus on engaging with its diverse community to build resilience as part of Key Focus Area 1 'Community Awareness and Engagement'. 2. Council has a proactive bush regeneration program across our local government area. Some actions include plantings of native vegetation, weed, rubbish removal, installation of bird boxes. Council has in the past delivered guided walks along Prospect Creek and has organised for a bird spotting walk in late June. In addition, Council also supports local bushcare groups working along Prospect Creek and Duck River. These are being actioned in Key Focus Area 1.1 and 2.1. 3. Council is exploring opportunities to increase the green cover in our area. Some ongoing initiatives include Council's annual 'Free Plants Giveaway' program where Council aims to give away 2000 plants and shrubs to residents annually. In addition, Council participates in the annual National Tree Day and Schools Tree Day where approximate 3000 plants are planted. 	No changes required

Comments / Suggestions	Council response	Changes to Strategy
Submission 2		
<p>General Comments</p> <p>The MDRRC strongly believes that this draft strategy should be rejected and that significant additional work should be carried out on its development to bring it to an acceptable standard.</p>	<p>Noted and acknowledged. This is a high level document providing strategic direction for biodiversity management. The aim of this document is to communicate biodiversity issues in a clear and concise manner to our community. This Strategy is supported by background analysis.</p>	<p>See comments below.</p>
<p>Long history of environmental, biodiversity and sustainability strategies and plans were not incorporated meaningfully into the biodiversity strategy. Past strategies should have been reviewed to incorporate learnings into the strategy.</p>	<p>As Council is a newly amalgamated Council, a holistic Biodiversity Strategy is required to cover the whole of Cumberland. Previous plans were site specific rather than Council wide.</p>	<p>Additional comment added to section 4 'Action Plan' to stipulate that project planning includes review of past strategies and apply learnings where applicable.</p>
<p>The draft strategy bizarrely includes areas of focus which have nothing to do with biodiversity management, including a photograph of community vegetable gardens, actions relating to water harvesting and water sensitive urban design and examples of litter clean up programs as "biodiversity management.</p>	<p>Council acknowledges that a wide range of initiatives are required to help biodiversity. These programs either support biodiversity outcomes through education and engagement with the community or encourage direct action, such as bee hives in community gardens and litter reduction programs. KFA's 1, 2 and 3 have actions that together will help manage biodiversity.</p>	<p>Amend captions in photos to explain biodiversity benefits, including role of community gardens.</p>

Comments / Suggestions	Council response	Changes to Strategy
Key Focus Areas have appeared in previous strategies and failed to turn around decline in biodiversity.	This is Cumberland Council's first Biodiversity Strategy. The Strategy maps out the high diversity areas and highlights priority areas where management actions will deliver the highest biodiversity outcomes. The Key Focus Areas (KFAs) were developed with the help of the community, including Council's Aboriginal and Torres Strait Island Committees, residents and community groups. KFAs are identified priority areas that are developed through the strategy development process. They guide program and activity development.	No changes required.
Strategy poorly communicates reasons to protect biodiversity and focuses on human centric rationale for protection. Community Consultation has been poor.	Council discusses the need to protect biodiversity for both the community (section 1.1) as well as for the natural environment (section 2.1). As part of the development of the strategy, Council held workshops with Council's Aboriginal and Torres Strait Islander Committee, residents and environmental groups. All active members of these groups, including members of the MDRRC were invited to participate.	Added additional objective in Key Focus Area 1 as follows 'Create opportunities for effective collaboration with our community'
Key Focus Area 2 KFA 2.1 This is broadly supported, but should be reworded to include targets. The current Council bush regeneration programs are inadequate, and bushland in the LGA continues to degrade. This KFA, as worded could result in ongoing degradation.	Noted and acknowledged. As part of KFA 2.4, Council will develop baseline data for biodiversity health as projects require.	Amended KFA 2.4 to include targets and now reads as follows 'Develop baseline data and targets for biodiversity health'.
KFA 2.2 is broadly supported, but it should be reworded to be stronger than just "identify opportunities".	Noted and acknowledged. Council will continue to investigate and implement biodiversity improvement initiatives, dependent on Council priorities and available funding.	Amended KFA 2.2 to 'Identify and progress opportunities that improve biodiversity connectivity for priority areas'
KFA 2.3 is broadly supported but should be worded to be stronger than just "explore" and also should be expanded to include regional initiatives, collaboration with state and federal agencies, and non-government organisations.	Council agrees with this comment. A key objective of KFA 2 is to 'Improve condition and connectivity of priority areas in line with regional strategic plans'.	Amend KFA 2.3 to read 'Explore and collaborate on suitable opportunities with neighbouring Councils and regional organisations'.

Comments / Suggestions	Council response	Changes to Strategy
KFA 2.4 broadly supported, but it is surprising that it is worded around "develop" when there are already many environmental baselines in the LGA from existing and past plans and strategies.	Noted and acknowledge. Although there have been past environmental baselines, due to amalgamation, Council has the challenge of developing consistent baselines across the newly amalgamated Council. This will be explored in KFA 2.4.	No changes required.
Key Focus Area 1 This should be changed to "Community Awareness, Engagement and Action" KFA 1.1 is generally supported. However, instead of initiatives, which are episodic and ephemeral, an ongoing environmental education program should be implemented, not only to raise awareness, but to change behaviours and to support action.	Noted and acknowledged. Environmental education programs will be considered under KFA 1.1.	Added 'Action' to KFA 1, it now reads 'Community awareness, engagement and action'.
KFA 1.2 is supported, but wording stronger than to "explore opportunities" is needed.	Noted and acknowledged.	Amended KFA 1.2 to 'Explore and progress engagement opportunities with the Aboriginal community in biodiversity management'
Suggested additional KFA: KFA 1.3 "Create and resource a Community Environment Reference Group, reporting to the General Manager, to advise and engage with Council on environmental issues and to review the implementation of this strategy and related plans."	Noted and acknowledged. This will be considered under KFA 3.3	No change required.
Suggested additional KFA: KFA 1.4 "Expand the existing Bushcare Program, with the aim of having community Bushcare groups in all Council owned or managed bushland areas."	Council agrees that bushcare programs form an important component of Council's bushland management program. Council will continue to explore opportunities to expand its existing support of bushcare groups throughout Cumberland in KFA 2.1	No change required.

Comments / Suggestions	Council response	Changes to Strategy
<p>Section 1.3</p> <p>The strategy states: The Draft Strategy aims to balance the needs and preferences of the community with Council's capabilities and resources.</p> <p>This is a worrying sentence. Firstly, the strategy should be about managing biodiversity and why would a balance between the community preferences and needs (which aren't actually articulated in the document) and Council resources and capability even be a consideration?</p>	<p>The Draft Biodiversity Strategy acknowledges that there is a need to manage Council's biodiversity, specifically in sections 1.3 and 2.1. Council recognises it has multiple commitments and is required to balance priorities within its capabilities and resources.</p>	<p>No change required.</p>
<p>Section 1.3.3</p> <p>There is little to indicate that this is a community focused strategy, so this premise is disputed.</p>	<p>Council has developed the biodiversity vision, key focus areas and actions with the help of residents and community groups in workshops. This document also aims to deliver the community vision as reflected in the Community Strategic Plan 2017-27. In addition, KFA 1 is focused on raising community awareness and engagement with the community to value biodiversity.</p>	<p>No change required.</p>
<p>Section 2.1</p> <p>The section should include description of the intrinsic values and rights of biodiversity, not just the values that support humans. The section should include additional threats that relate to:</p> <ul style="list-style-type: none"> -light pollution (that can affect nocturnal animal behaviour and survivability); -motion pollution, which impacts especially on wetland and migratory bird feeding behaviour and intertidal organisms' feeding behaviour; -noise pollution; -fragmentation from recreational use such as bike paths, unrestricted recreational access; - domestic cats and dogs; and - inappropriate fire regimes. 	<p>Noted and acknowledged. Section 2.1 emphasises the importance of the three levels of biodiversity, in addition, the supporting <i>Biodiversity Background Study</i> further explores the importance of biodiversity. In addition, Eco Logical Australia has reviewed the threatening processes relevant to Cumberland Council in supporting <i>Biodiversity Background Study</i>.</p>	<p>Additional section called 'Threats and Challenges' added to the report, including light pollution and fragmentation.</p>

Comments / Suggestions	Council response	Changes to Strategy
<p>Section 2.2</p> <p>It is surprising that such a basic description of biodiversity principles has been included, especially without any identification of constraints or opportunities relating to the specific conditions in Cumberland.</p>	<p>This document identifies opportunities to improve biodiversity under the heading of 'Biodiversity Principles'. Council aims to manage biodiversity by adhering to these principles (Habitat, wildlife corridors, green infrastructure and the biodiversity hierarchy).</p>	<p>Constraints will be added in section 2.1 under 'Threats and Challenges'. Opportunities appear in section 4 'Action Plan' and mapped out in Priority Areas map on page 21.</p>
<p>Section 2.2.2</p> <p>This section should look at the need to utilise street and parkscapes, and backyards to increase habitat and connectivity. It should also consider horticultural species selection by Council. Council currently uses a number of known weed species in its landscaping or species that have little or no biodiversity value.</p>	<p>Habitat and connectivity is further detailed in Council's Background Study. A recommended species list also appears in the Appendix A of the <i>Background Study</i>. Connectivity is addressed in KFA 2. Connectivity opportunities are highlighted in the Priority Areas map on page 21.</p>	<p>No change required.</p>
<p>Section 2.2.4</p> <p>With only 2.6% of natural areas left, Council should aim for development to be biodiversity positive, not just biodiversity neutral. This should be made explicit and detailed in this section.</p>	<p>Council agrees with this comment. As per s2.2.4, Council preference is to apply the biodiversity mitigation hierarchy and avoid biodiversity loss wherever possible.</p>	<p>No change required.</p>
<p>Section 3</p> <p>This section utterly fails to recognise any of the aquatic biodiversity in the LGA.</p>	<p>Council's commitment to managing aquatic biodiversity is demonstrated through our membership of The Parramatta River Catchment Group (PRCG) whose three area of focus are biodiversity, estuary management and water/stormwater management. Section 1.3.2 recognises that Council has responsibility under the Central City District Plan goal C3 to 'Protect and improve the health and enjoyment of the District's waterways'.</p>	<p>Added additional paragraph to acknowledged the important role of aquatic biodiversity under section 3 'Biodiversity in Cumberland'.</p> <p>Added additional Action under KFA 2: Support delivery of Parramatta River Catchment Group's 'Parramatta River Masterplan'.</p>

Comments / Suggestions	Council response	Changes to Strategy
<p>Table 4</p> <p>This table is not comprehensive, and also contains irrelevant information.</p> <ul style="list-style-type: none"> -Monitoring of plant give away programs in other jurisdictions has shown that they have little value. Plants are not planted or maintained. -The stated Habitat Stepping Stones monitoring measure is meaningless from a biodiversity impact perspective. -Workshops and events - apart from the native beehive program, none of these are relevant to native biodiversity. -Litter Programs - this program is not going to deliver biodiversity outcomes. -Clean up Australia Day - this program is not going to deliver biodiversity outcomes. -Children's Sustainability Hub - it should be clarified how this program will contribute to biodiversity. -This list only mentions one grant funded project and misses out on a large number of grants that the previous Councils were given for biodiversity works, few of which have been maintained. 	<p>Council acknowledges that a wide range of initiatives are required to help biodiversity. These programs either support biodiversity outcomes through education and engagement with the community or encourage direct action, such as planting native species and cleaning up the local environment. KFA's 1, 2 and 3 have actions that together will help manage biodiversity.</p>	<p>No change required.</p>
<p>Section 4</p> <p>The vision is inadequate and meaningless.</p> <p>This section highlights the inadequacy of the structure of this strategy. The strategy as written has a meaningless vision, poor objectives, no targets and a lack of measurable actions and outcomes. There is little in this document that could meaningfully drive an integrated management regime to maintain or improve the biodiversity of the LGA.</p>	<p>Noted and acknowledge. The vision is written to be aspirational and reflect the desires of the local community as developed in Council workshop sessions with residents and community groups. The first half of the Strategy (Sections 1 and 2) describes the need for biodiversity management whilst the second half (section 3 and 4) explain the current biodiversity context and actions. Section 4 notes that the biodiversity strategy will be reviewed annually to identify actions taken, lessons learnt and measureable changes.</p>	<p>No change required.</p>
<p>Submission 3</p>		

Comments / Suggestions	Council response	Changes to Strategy
<p>KEY FOCUS AREA 1: Community Awareness and Engagement</p> <p>We welcome any initiatives to increase awareness of our native flora and fauna and their value, particularly in schools and local media.</p> <p>The Aboriginal community must be engaged in biodiversity management, to share a great wealth of expertise, knowledge and history for our area.</p> <p>Encourage a focus on connecting the network of volunteers.</p>	<p>Council agrees with these comments. The Strategy will be addressing education through KFA 1.1 and indigenous engagement through KFA 1.2. Council will be supporting bushcare groups and volunteers in KFA 2.1.</p>	<p>No changes required.</p>
<p>KEY FOCUS AREA 2: Habitat connectivity and condition</p> <p>Motivation is also needed to remove exotic weed species which can easily spread into bushland.</p> <p>Connectivity and the value of significant tree canopy and habitat in our neighbourhoods must be made clear, with regulations around removal and replanting strengthened and stringently monitored.</p> <p>Council seriously needs more Tree Preservation Officers to help preserve and identify significant trees.</p> <p>Respect for waterways and native areas must be encouraged. (e.g. fines for dumping of rubbish, damage and weeds spread by vehicles, vandalism, etc).</p>	<p>Council agrees with these comments. Council has an active bush regeneration team focused on weed removal and will continue with this program under KFA 2.1.</p> <p>Council acknowledges the importance of tree canopy cover. Council is exploring opportunities to strengthen regulations regarding removal and replacement in our planning instruments. This is being addressed under KFA 3.1.</p> <p>Council agrees that Tree Management Officers play an important role in Council and will continue to monitor this area in KFA 3.3.</p> <p>Council's Waste and Resource Recovery Strategy 2018-23 addresses illegal dumping and littering under KFA 4.</p>	<p>Added Council's Waste and Resource Recovery Strategy' as a key influencing document under section 1.3.3 Local Planning Context.</p>

Comments / Suggestions	Council response	Changes to Strategy
<p>KEY FOCUS AREA 3: Planning and innovation</p> <p>These are all very welcome steps, in particular KFA 3.1 Embed biodiversity considerations into strategic plans and controls.</p> <p>KFA 3.2 and KFA 3.3 are likewise integral for planning and innovation, to save waterways from pollution by run-off, and to allow improved and consistent biodiversity management strategies to take effect in the longer-term.</p> <p>The aim to incorporate the biodiversity strategy into all aspects of development of a new Local Environment Plan for Cumberland is most welcome.</p>	<p>Noted and acknowledged.</p>	<p>No change required.</p>
<p>3.2 VEGETATION COMMUNITIES AND SPECIES UNDER THREAT</p> <p>Pages 12 and 13 map biodiversity in the area, what is not so clear is the occurrence of any native species at all. We are concerned that the vast areas without any green or orange dots could be misinterpreted as not having endangered species, so therefore holding abundant healthy native communities. To give an accurate picture for general public display, perhaps the maps could be overlayed to show what is actually in those blank spaces: industry, detached housing...</p> <p>It is very gratifying to note that the Duck River corridor is shown as a District Priority.</p>	<p>The threatened species that appear on the 'Threatened species' map are all native species.</p> <p>Council acknowledges your concern about the empty spaces in the map. The aim of this map was to graphically show locations of threatened species in a clear and simple map. Council believes that additional overlays would clutter the map.</p> <p>This Strategy formalises Duck River as a priority corridor and reinforces it as strategic corridor in line with The Central City District Plan's Green Grid.</p>	<p>Clarify the species map by changing the map title to 'Native Threatened Species.'</p>
<p>3.3 MANAGEMENT HISTORY</p> <p>Bushcare Volunteers: Monitoring and Follow-up: We suggest 'Bushcare groups monitor sites they work on' be amended to 'Bushcare groups and council teams monitor sites they work on'</p> <p>Bush Regeneration: 'Council undertakes bush regeneration activities throughout the LGA - Ongoing. Monitoring and Follow-up: Ongoing – targeted.'</p>	<p>Council agrees with these comments and KFA 2.1 focuses on bush regeneration programs.</p>	<p>Amend Table 4: Bushcare Volunteers Monitoring comment to 'Bushcare groups and Council monitor sites they work on'.</p> <p>Amend Bush regeneration description to include expansion of bush regeneration sites in line with Council priorities and funding.</p>

Comments / Suggestions	Council response	Changes to Strategy
It is not currently at all clear where this is actually 'On-going'. We suggest amending 'On-going' to ' On-going and expanding '.		
Submission 4		
I hope Council will amend both documents – the Cumberland Biodiversity Strategy 2019 and its Draft Operational Plan 2019-20 – and clarify that Council will not distribute beehives to unit residents.	Noted and acknowledged. Council will not distribute beehives to dwellings with a balcony.	Amended Table 4 by removing 'balcony' and updated the Native Beehive Program to reflect this change.

DOCUMENTS
ASSOCIATED WITH
REPORT C07/19-149

Attachment 2

Amended Cumberland
Biodiversity Strategy 2019



Cumberland Biodiversity Strategy *2019*

Grey-headed Flying-fox camp at Duck River, Clyde



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1. Introduction

The landscape of the Cumberland Local Government Area (LGA) was traditionally managed by the Darug people for thousands of years. This included seasonal harvesting of food and resources and burning patches of the vegetation to favour certain species of plants and animals. The dominant vegetation across this part of the Cumberland Plain would, most likely, have been grassy woodland.

Farming and development in the area commenced in 1789 and progressively resulted in widespread changes to natural resources across the Cumberland Plain. The Cumberland LGA is now a highly urbanised environment containing gardens, parks, streetscapes, bushland, creeks and rivers. Around 2.6% of native vegetation remains in the LGA compared to what existed prior to European settlement. Many species, populations and ecological communities that would have once been in the area are no longer present, and many of those that remain are recognised as threatened.

In recent years, Cumberland Council, the community and others have acted to protect and rehabilitate some remaining patches of bushland in the LGA. Pockets of high biological diversity, or 'biodiversity,' remain. Further action is needed to reduce threats to biodiversity to sustain ecosystem services and benefit community health and wellbeing.

This Biodiversity Strategy presents a strategic and coordinated approach that has been developed by Council in consultation with the community to attract and effectively manage resources for biodiversity protection and enhancement in the Cumberland LGA.

1.1 COMMUNITY FOCUS

A 2017 Cumberland LGA community survey ranked the importance of 'protecting the natural environment' and 'tree management' as 'very high'. Council's Community Strategic Plan sets the direction for a clean and green future that will be supported by the following community outcomes:

- We have great natural and green spaces that suit a variety of uses
- We value the environment and have measures in place to protect it
- Our public spaces are clean and attractive.

This Strategy addresses community concern that biodiversity may be 'taken for granted', by highlighting:

- A strong and sustainable economy relies on having healthy ecosystems
- Biodiversity is important for the health and wellbeing of the community

- Nature and natural infrastructure are critical assets in strengthening cities' resilience to a broad range of shocks and stress
- Indigenous people have an interest in the conservation and sustainable use of native species and environments through their relationship with their traditional lands and waters.

1.2 STRATEGY FRAMEWORK

The Strategy provides a framework for managing biodiversity over a ten-year period. It presents information about the importance and values of biodiversity. It sets the vision and identifies objectives and actions for future biodiversity management in three Key Focus Areas. The vision was developed in consultation with Council staff, Council's Aboriginal and Torres Strait Islander Consultative Committee and the broader community.



Figure 1: Vision and Key Focus Areas

1. Introduction (*continued*)

1.3 LEGISLATIVE AND PLANNING CONTEXT

The Strategy aims to balance the needs and preferences of the community with Council's capabilities and resources. Key legislation and policies that have influenced development of the Strategy are outlined below.

1.3.1 International agreements and legislative obligations

Australia is signatory to a range of international agreements relevant to biodiversity. Our international obligations influence our legal framework. International agreements include the Convention on Biological Diversity, and Bilateral migratory bird agreements with Japan (JAMBA), China (CAMBA) and the Republic of Korea (ROKAMBA). Some of the key pieces of legislation that influence our operations include the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* and the *NSW Biodiversity Conservation Act 2016*, which set requirements for protection and management of threatened species, populations and ecological communities.



Regent honey eater

1.3.2 Regional planning context

The Greater Sydney Commission has developed District Plans with planning priorities for the metropolitan region to 2056. The Central City District Plan includes the following priorities for sustainability relevant to the Cumberland LGA:

- C13: Protecting and improving the health and enjoyment of the District's waterways
- C15: Protecting and enhancing bushland, biodiversity and scenic and cultural landscapes
- C16: Increasing urban tree canopy cover and delivering Green Grid connections
- C19: Reducing carbon emissions and managing energy, water and waste efficiently
- C20: Adapting to the impacts of urban and natural hazards and climate change.

1.3.3 Local planning context

This Strategy provides direction for protecting and enhancing Cumberland's natural areas. The vision developed for this Strategy was developed in consultation with the community. As a community-focused strategy, it helps deliver the Community Strategic Plan by addressing Strategic Goal 3 for a 'Clean and Green Community,' by protecting natural areas.

The Strategy supports the development of a new Local Environment Plan for Cumberland by providing guiding management principles in the areas of habitat preservation, wildlife corridor management, green infrastructure networks and biodiversity offset guidelines. These elements can inform the scope and application of planning controls in the Cumberland area.

The Strategy operates alongside the Environmental Management Framework and Waste and Resource Recovery Strategy, helping to reinforce the principles of sustainable development.

1.3.4 Key legislation

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

This is a national scheme for environmental protection and biodiversity conservation. It lists the triggers for significant impacts to endangered and threatened communities, such as the Cumberland Plain Woodland and Sydney Turpentine Ironbark Forest.

NSW Environmental Planning and Assessment Act 1979

This principal planning legislation for the State provides a framework for the overall environmental planning and assessment of development proposals. The Act provides for the preparation of environmental planning instruments (including a Local Environmental Plan or LEP).

NSW Biodiversity Conservation Act 2016

This requires that councils consider the impact on threatened species, populations and communities in fulfilling their statutory responsibilities under the Environmental Planning & Assessment Act for development approvals.

NSW Biosecurity Act 2015

This legislation provides a framework for the management of pests, disease and weeds across all lands.

State Environmental Planning Policy 19

This Policy provides a statutory framework for protecting urban bushland and biodiversity within the LGA. The aim is to protect and preserve bushland by protecting remnant plant communities, retaining bushland and protecting native plants, animals and wildlife corridors.



Figure 2: Cumberland Council's planning framework

2. Biodiversity values and concepts

2.1 WHAT IS BIODIVERSITY AND WHY IS IT IMPORTANT?

Biological diversity, or biodiversity, is the variety of life forms in all terrestrial (land) and aquatic (water) environments on Earth. There are three levels of biodiversity:

- Genetic diversity – the variety of genetic information contained in individual plants, animals and micro-organisms
- Species diversity – the variety of species e.g. Grey Box and Forest Red Gum
- Ecosystem diversity – the variety of habitats, ecological communities and ecological processes. An ecosystem is a dynamic combination of plant, animal and micro-organism communities and their non-living environment (e.g. soil, water and the climatic regime) interacting as a functional unit, e.g. Cumberland Plain Woodland ecological community.

2.1.1 Threats and challenges

Ongoing threats and challenges to biodiversity in the Cumberland LGA are typical of urban areas and include:

- Habitat loss and degradation
- Fragmentation
- Vegetation clearing
- Light pollution
- Spread of weeds
- Pest and feral animals

The biodiversity value of an area is determined by the integrity of the vegetation based on its composition, structure and function, and the suitability of habitat.

Biodiversity supports ecosystem services that are essential for human survival. Ecosystem services include clean air and water, pollination and temperature control. Ongoing threats to biodiversity in the Cumberland LGA include climate change, vegetation clearing, introduction and spread of weed species, fauna hunting by pest animals, and diseases.



Figure 3: Ecosystem services (Source: www.teeb.org)

2.2 BIODIVERSITY PRINCIPLES

A range of management and design principles to guide how we will protect and expand areas of high biodiversity value within the Cumberland LGA are covered in this section. Approaches include improving connectivity, reducing fragmentation, and increasing the size of habitat patches by natural regeneration of native species in conjunction with weed control and vegetation.

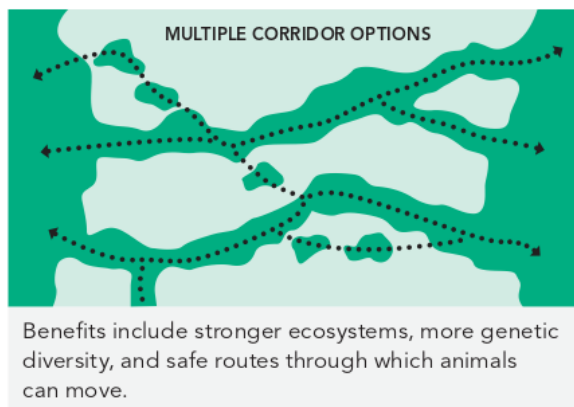
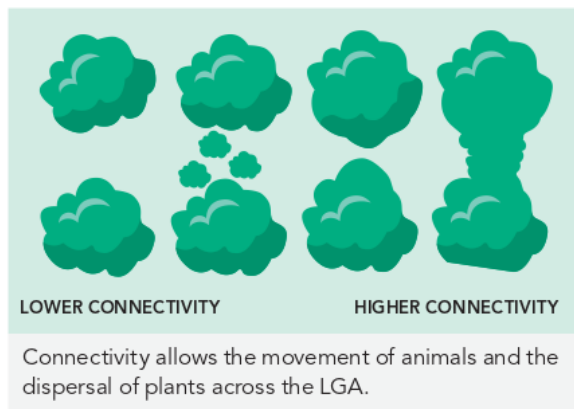


Figure 4: Habitat connectivity creates stronger ecosystems

2.2.1 Habitat

Habitat is the natural home or environment in which a plant or animal lives. Animals may use different habitats for breeding, roosting or feeding. For example, many parrot species feed in trees that have seeds and fruit but need hollows in which to nest and breed. We can increase available habitat by protecting existing habitat and adding features such as logs and suitable types of nesting boxes.

Increased habitat areas enhance available resources and allow more ecosystem niches, thereby supporting more species and larger, more sustainable populations. The size of the habitat patch should be as large as possible to reduce edge effects such as weed invasion, spill of artificial lighting, rubbish dumping and vandalism.

2.2.2 Corridors

Biodiversity corridors (also known as wildlife corridors or ecological corridors) are areas of connected habitat across the landscape that:

- Allow the movement of animals and the dispersal of plants
- Ensure genetic exchange of plant and animal populations that may otherwise become extinct in the long term
- Allow recolonisation of habitat areas by plants and animals that have become locally extinct from events such as land clearing, fire, disease, fluctuating food supply and extreme weather
- Provide a relatively safe route for the movement of animals across the landscape.

Corridors through the Cumberland LGA should connect with district biodiversity corridors (such as the Green Grid) across western Sydney.

2. Biodiversity values and concepts *(continued)*

2.2.3 Green infrastructure

Green infrastructure is the network of green spaces, natural systems and semi-natural systems that are strategically planned, designed and managed in order to support a good quality of life in an urban environment. Elements of green infrastructure include roof gardens, residential gardens, local parks, streetscapes, service corridors, waterways, water-sensitive urban design features and regional recreation areas. Some of the benefits of green infrastructure include increased biodiversity, improved microclimate, and improved amenity and community wellbeing.

A fully functioning ecological community that sustains a variety of naturally occurring species produces the highest biodiversity value. An example to explain this concept is as follows: a streetscape planted with *Eucalyptus moluccana* (Grey Box) and *E. tereticornis* (Forest Red Gum) trees, which are characteristic species of the critically endangered community Cumberland Plain Woodland, is of lower biodiversity value than a large patch of healthy Cumberland Plain Woodland supporting a variety of native species.

Carbon capture, or sequestration, is another benefit of green infrastructure. Plants and vegetation have the ability to store carbon, absorbing it from the environment, which offsets the impacts from harmful emissions. A network of green infrastructure and spaces has the added benefit of capturing carbon from the atmosphere and keeping air clean.

2.2.4 Biodiversity offsets and replacement planting

Developments and activities need to be designed and constructed to:

1. avoid environmental impacts
2. minimise environmental impacts
3. ameliorate or mitigate environmental impacts.

As a last resort, consideration may be given to 'offsetting' or compensating for an environmental impact. There are different offset schemes available and specialist advice is needed to determine which scheme, if any, is applicable. Some impacts cannot be offset because they are likely to contribute significantly to the risk of a threatened species or ecological community becoming extinct. Importantly, an offset area would need to be managed for conservation in perpetuity.

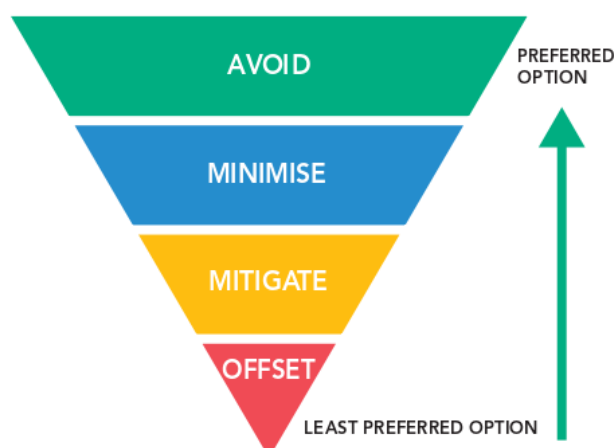


Figure 5: The biodiversity mitigation hierarchy

3. Biodiversity in Cumberland

3.1 LANDSCAPE

The Cumberland LGA is a highly urbanised landscape within the Cumberland Basin of western Sydney. It has gently undulating terrain with some flood-prone lands. Waterways in the area drain to the Georges River to the south or Parramatta River to the north-east.

3.2 VEGETATION COMMUNITIES AND SPECIES UNDER THREAT

Cumberland LGA has about 2.6% (less than 200 ha) of native vegetation cover, and ten of the eleven native vegetation communities that exist in the area are under threat. Many native plant and animal species recorded in the area are also endangered. Further information is provided in Tables 1-3.

Table 1: Vegetation communities in the Cumberland LGA

VEGETATION COMMUNITY	BC ACT STATUS	EPBC ACT STATUS	APPROXIMATE AREA (HA)	AREA AS PERCENTAGE OF LGA (7,156 HA)
Castlereagh Ironbark Forest	EEC	CEEC	57.9 ha	0.8%
Castlereagh Shale-Gravel Transition Forest	EEC	CEEC	1.8 ha	0.03%
Castlereagh Scribbly Gum Woodland	EEC	EEC	0.8 ha	0.01%
Cumberland River Flat Forest	EEC	–	32.0 ha	0.4%
Cumberland Swamp Oak Riparian Forest	EEC	–	16.1 ha	0.2%
Coastal Freshwater Wetland	EEC	–	4.2 ha	0.06%
Cumberland Shale Hills Woodland	CEEC	CEEC	2.2 ha	0.03%
Cumberland Shale Plains Woodland	CEEC	CEEC	70.3 ha	1%
Estuarine Mangrove Forest	–	–	1.6 ha	0.02%
Estuarine Saltmarsh	EEC	VEC	0.3 ha	<0.01%
Sydney Turpentine-Ironbark Forest	EEC	CEEC	0.4 ha	<0.01%
Total native vegetation			187.6 ha	2.57%

Key for table:

- BC Act – NSW Biodiversity Conservation Act 2016
- EPBC Act – Commonwealth Environment Protection and Biodiversity Conservation Act 1999
- Vulnerable ecological community (VEC) – facing a high risk of extinction in Australia in the medium-term future
- Endangered ecological community (EEC) – facing a very high risk of extinction in Australia in the near future
- Critically endangered ecological community (CEEC) – facing an extremely high risk of extinction in Australia in the immediate future

3.3 AQUATIC BIODIVERSITY

The freshwater ecosystems of Cumberland are linked to their catchments and riparian corridors, and affect the water quality of the Parramatta River and Georges River downstream. The urbanised nature of Cumberland means that the aquatic habitats have relatively low biodiversity and poor water quality, although there are some more natural areas with relatively healthy and diverse aquatic ecosystems. Aquatic species in the area include the Eastern Long-Necked Turtle and Striped Marsh Frog. Improvements in catchment and riparian health, including pollution control and revegetation, will directly benefit aquatic ecosystems. Council is actively working toward improvements in aquatic health as a member of the Parramatta River Catchment Group.

3. Biodiversity in Cumberland (*continued*)

Table 2: Threatened plant species recorded in the LGA (BioNet 2018)

SCIENTIFIC NAME	COMMON NAME
<i>Acacia pubescens</i>	Downy Wattle
<i>Callistemon linearifolius</i>	Netted Bottle Brush
<i>Epacris purpurascens</i> var. <i>purpurascens</i>	
<i>Persoonia nutans</i>	Nodding Geebung
<i>Pimelea spicata</i>	Spiked Rice-flower
<i>Pomaderris prunifolia</i>	
<i>Pultenaea pedunculata</i>	Matted Bush-pea
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly
<i>Tetradlea glandulosa</i>	
<i>Wahlenbergia multicaulis</i>	Tadgell's Bluebell



Magenta Lilly Pilly



Netted Bottle Brush

Table 3: Threatened animal species recorded in the LGA
(BioNet 2018)

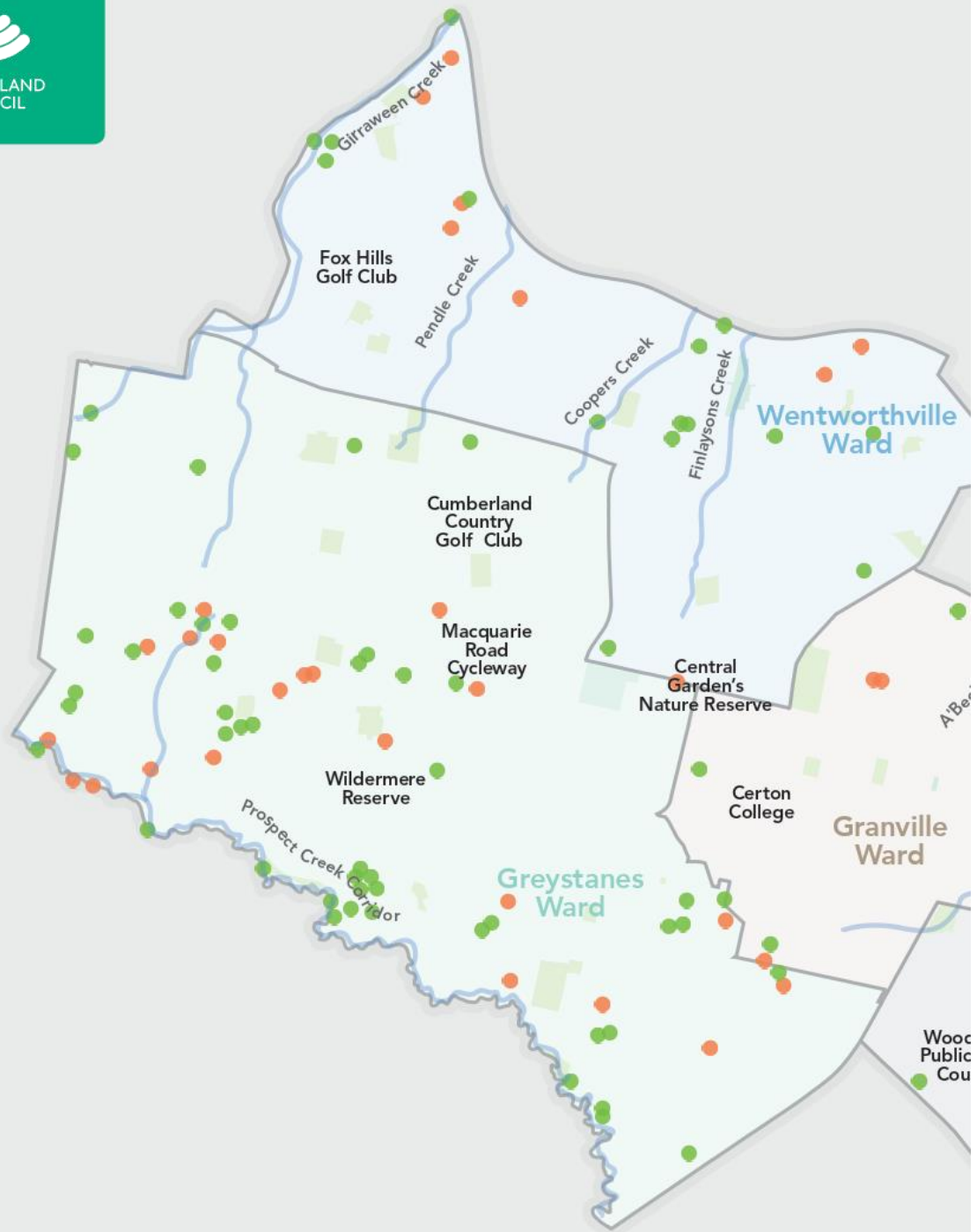
SCIENTIFIC NAME	COMMON NAME
<i>Anthochaera phrygia</i>	Regent Honeyeater
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle
<i>Hieraaetus morphnoides</i>	Little Eagle
<i>Lathamus discolor</i>	Swift Parrot
<i>Litoria aurea</i>	Green and Golden Bell Frog
<i>Meridolum corneovirens</i>	Cumberland Plain Land Snail
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat
<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat
<i>Ninox strenua</i>	Powerful Owl
<i>Petroica boodang</i>	Scarlet Robin
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat



Green and Golden Bell Frog



Grey-headed Flying-fox

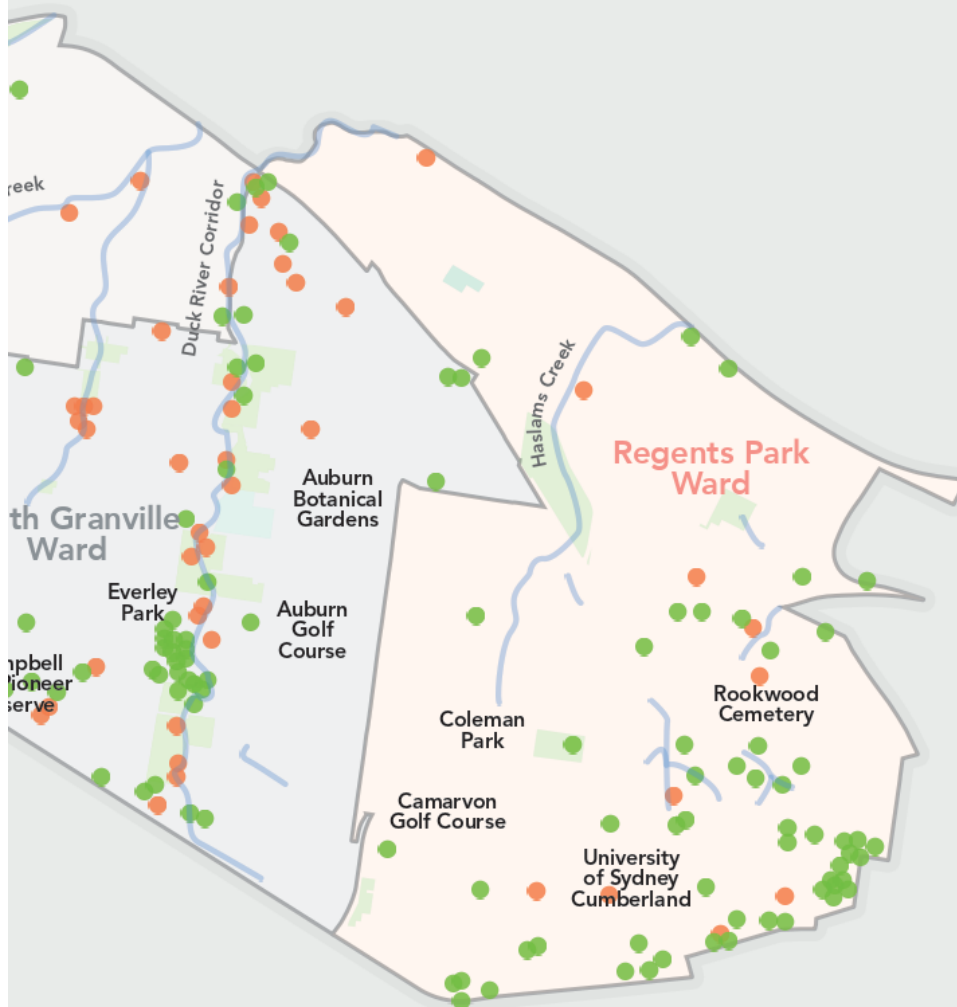


CUMBERLAND LGA

Native threatened species

- Threatened Native Fauna
- Threatened Native Flora

Figure 6: Threatened native flora and fauna species in Cumberland



3. Biodiversity in Cumberland (*continued*)

3.4 MANAGEMENT HISTORY

In recent decades, efforts have been made to protect and enhance some areas of the natural environment in Cumberland LGA. These actions have mainly been resourced by local councils and/or community volunteers. Further information is provided in Table 4.



Increasing habitat and greenery - National Tree Day

Table 4: Past and ongoing biodiversity management activities within the Cumberland LGA

PROGRAM	DESCRIPTION	DURATION	MONITORING / FOLLOW-UP
Free Plants Giveaway	Council runs a free plants giveaway program. Residents receive up to 10 varieties of native shrubs and trees at various Council events throughout the year	Ongoing – annually	n/a
Habitat Stepping Stones	Encourage residents to create habitats for native wildlife by adding 3 elements – water, food, shelter	October 2017 – ongoing	Record of how many residents have signed up
Native Stingless Bee Hive Program	Council provides a limited number of beehives to residents	October 2017 – ongoing	Residents monitor and are responsible for the hive
Workshops and Events	Council hosts environmental and sustainability workshops for the community including worm farming, composting, native beehive program, permaculture, pollinator workshops	Ongoing – annually	n/a
Litter programs	Reduce litter in/around key locations across the LGA including Granville TAFE, parks and public spaces, and waterways	Ongoing	Council monitors gross pollutant traps periodically, along with litter count surveys
Clean up Australia Day	Council actively promotes and holds an annual Clean Up Australia Day event	Ongoing – annually	Litter collected and number of participants are recorded
Children's Services Sustainability Hub	This educational program inspires children to learn about positive messages about their environment and teaches sustainable practices in their daily lives. Each centre has a vegetable garden, worm farm and compost site	Ongoing – annually	n/a
Bushcare Volunteers	Council supports volunteer bushcare groups. These groups participate in weeding, planting and litter collection at Duck River and Lower Prospect Canal Reserve	Ongoing	Bushcare groups and Council teams monitor sites they work on
Bush Regeneration	Council undertakes bush regeneration activities throughout the LGA. Council continues to investigate expansion of the program, aligned with priorities and available funding.	Ongoing	Ongoing – targeted
Parramatta River Catchment Group biodiversity Corridor project	Environmental Trust Funded partnership project, mapping potential biodiversity corridors through the Parramatta River catchment (former Auburn LGA). Small component of revegetation carried out at targeted sites	2013–2015	Targeted maintenance
Regional Fox Control Program	Duck River Corridor – Botanic Gardens through to Mona Park	2015–2016	Ongoing – targeted

4. Action plan

Council will work with the community to accomplish the vision of a clean and green environment for current and future generations to enjoy by protecting and enhancing Cumberland Council's natural areas and green infrastructure. Actions to be implemented by Council address objectives for three key focus areas.

Actions will be monitored to determine if they are meeting the objectives of the key focus areas. The results will be reviewed and reported to the community each year to demonstrate effective use of public funds. Council's Annual Report to the community will identify:

- The types and locations of actions taken
- Lessons learnt for future action
- Measurable changes for the year against the strategic objectives
- Cumulative changes against the strategic objectives since implementation of the Biodiversity Strategy commenced.

A review and re-prioritisation of remaining actions will be undertaken at each review, to account for relevant funding opportunities, changing legislation or relevant conclusions from previous studies. The Action Plan will remain flexible to meet the changing needs of the Council over the life of the Strategy.

As part of Council's continuous improvement philosophy, project planning will include a review of relevant past strategies and plans.

A range of district and local priority areas have also been identified across Cumberland for biodiversity action, as shown in Figure 7. Council will align actions from Key Focus Areas in the strategy and delivery initiatives to support biodiversity outcomes at these locations.

Key Focus Area 1:

Community awareness, engagement and action



Objectives	Increase understanding and appreciation of the value of biodiversity				
	Create opportunities for effective collaboration with our community				
Measures	Number of education and engagement initiatives delivered annually				
	Community satisfaction survey response for 'Environmental education programs'				
Actions	Timeframe				
	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
KFA 1.1	Develop and implement biodiversity education initiatives to raise awareness of biodiversity and its values				
KFA 1.2	Explore and progress engagement opportunities with the Aboriginal community in biodiversity management				



Local resident participating in Council's native bee hive program



Community Gardens in Cumberland - a place for biodiversity engagement and education



Duck River Corridor – a key link to the Green Grid

Key Focus Area 2:

Habitat connectivity and condition



Objectives	Protect the health and enjoyment of natural areas					
	Improve condition and connectivity of priority areas in line with regional strategic plans					
	Protect and enhance bushland and biodiversity					
Measures	Community satisfaction survey response for 'Protecting the natural environment'					
	Biodiversity health indicators (subject to baseline being developed)					
	Bushland management actions					
	Alignment with regional strategic plans					
Actions		Timeframe				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
KFA 2.1	Continue bush regeneration programs, including weed and pest control and revegetation					
KFA 2.2	Identify and progress opportunities that improve biodiversity connectivity for priority areas					
KFA 2.3	Explore and collaborate on suitable opportunities with neighbouring Councils and regional organisations					
KFA 2.4	Develop baseline data and targets for biodiversity health					
KFA 2.5	Support delivery of Parramatta River Catchment Group's 'Parramatta River Masterplan'					



Rainwater harvesting tanks at Children's Services Centres

Key Focus Area 3:

Planning and innovation



Objectives	Integrate biodiversity management into Council’s planning and compliance systems					
Measures	Community satisfaction survey response for 'Protection of green and open spaces'					
	Establishment of processes and compliance tools to protect biodiversity					
Actions		Timeframe				
		Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
KFA 3.1	Embed biodiversity considerations into strategic plans and controls					
KFA 3.2	Investigate opportunities to recover and recycle water, including Water Sensitive Urban Design opportunities					
KFA 3.3	Investigate opportunities to improve organisational capacity in biodiversity management					



CUMBERLAND LGA

Priority areas

- District Priority
- Local Priority
- Regional Links

Figure 7: Priority district and local areas for biodiversity action





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