



MIDCOAST
council

SECTION TWO

BIODIVERSITY PROGRAM

**BIODIVERSITY FRAMEWORK
2020 - 2030**

THEME 1:

ENGAGEMENT AND PARTNERSHIPS



1.1 Community education and participation

The importance of community involvement in conservation is widely recognised. Individuals or groups can participate in conservation in a variety of ways, including the provision of land, assisting with on-ground works, involvement in survey and monitoring, provision of funding and influencing policy and strategies through debate. Community involvement is particularly important for conservation actions that involve private land. This is because individuals, not governments, own or manage the land and, if changes to land management and effective conservation are to be achieved, those individuals must be supportive and directly involved in the actions.

Council is a service provider in delivering biodiversity conservation education and engagement programs and has a role to proactively support and foster this recognition and interest within the community.

Community appreciation for environmental values can be enhanced when people have appropriate access to nature and nature-based activities.

Council has a Community Engagement Strategy, an Education Strategy currently in development and already delivers a range of community education and engagement programs including citizen science programs like Waterwatch, community based social marketing programs like Backyard Bushcare, annual water quality monitoring education programs like the Waterway and Catchment Report Card as well as a variety of community environmental education events, threatened species workshops, wetland tours, walks, etc, hands on environmental museum events and more. Council also stays in contact with the community through programs like the Creek to Coast that allow residents to actively engage in activities happening in the region.

Council has also collaborated with other agencies to spread biodiversity conservation messages to the community, including shorebird programs and whale awareness messages.



Actions	Timeframe
1.1.1 Engage with the community on biodiversity, stewardship, volunteering, citizen science and behaviour programs	Ongoing
1.1.2 Develop a biodiversity community engagement plan, in line with the principles outlined in the <i>MidCoast Council Engagement Strategy</i>	Medium term

1.2 Landholder engagement and incentives

Council has a role to engage, support and provide incentives to help landholders protect and restore biodiversity.

This can be in the form of assisting property planning and management for biodiversity outcomes, landowner engagement programs and incentives for activities such as revegetation for shelter belts, off stream water and riparian weed management

In addition to these, innovative farming practices are an approach rural landholders can use to help restore landscape function, have sustainable production, healthy nutrient cycling, increase biodiversity and resilience to change. These practices place importance on such issues as the retention of stands of native vegetation, stream-bank stability and microbiological resources in the soil, whilst ensuring the ongoing viability and stability of the production system.



Actions	Timeframe
1.2.1 Develop a package of biodiversity related resources for landowners	Medium

1.3 Partnerships for biodiversity

Effective, long-term biodiversity achievement will require coordinated, targeted and strategic efforts from a range of stakeholders, including Council. Effective partnerships are therefore vital to successful planning and implementation of biodiversity outcomes.

One of the key benefits from partnerships is in bringing together complementary and often unique sets of skills and resources. Effective partnerships rely on transparency and honesty, clear and open communication, honouring of agreements, involvement of key personnel and shared and common goals. Examples of partnerships include representation on working groups and joint project development. Examples of activities that Council can work with partners include:

- Road signage
- Nest box program
- Wildlife management particularly during emergencies

Council currently engages with a large range of stakeholders in relation to biodiversity conservation, including landholders and the community, businesses, research institutions, government agencies and community organisations and non-government agencies. These include FAWNA, the Local Aboriginal Land Councils, Local Land Services, DPIE, Myall Koala and Environment Group, Tops to MidCoast Landcare, Manning Coastcare, Landcare Australia Ltd, Manning River Turtle Conservation Group and Koalas In Care. Council has delivered community citizen science projects and has invested in university partnerships (including at five ARC Linkage grants) and is represented on several threatened species joint working groups.

Photo courtesy of FAWNA



Actions	Timeframe
1.3.1 Form, foster and maintain effective partnerships with key partners across a broad range of biodiversity objectives and programs	Ongoing

1.4 Bushcare and Landcare Support

Natural areas are being looked after for present and future generations to enjoy as well as contributing into decision making processes by volunteers which help develop consensus solutions to local environmental problems.

Environmental volunteer programs aim to involve the community and raise awareness to help value the environment. It brings groups of people together and promotes stewardship for the environment.

Volunteers make a significant contribution to management of council owned reserves. Volunteer groups are located throughout the LGA, including Dune Care (multiple villages), River Care Gloucester, Friends of Browns Creek. Volunteers are inducted in operational works such as weed control, mowing and bush regeneration activities within specified sites, generally, environmental activities are in collaboration with Council staff. Sites need prioritising for development of plans of management for select sites, incorporating volunteer activities/outcomes.



Actions	Timeframe
1.4.1 Prioritise sites to develop plans of management, incorporating volunteer activities	Short term
1.4.2 Explore and implement innovative ways to increase volunteer participation on Council owned and managed natural area reserves	Medium term

THEME 2: RESERVES AND CONSERVATION AGREEMENTS



2.1 Mapping and zoning of protected areas

Good planning and design is fundamental to protecting the environment and building greater resilience to natural hazards and climate change, which may be achieved through protecting and connecting natural areas³⁰. This may be through public and privately protected reserves, depending on zoning. Across the MidCoast Region, there are several permanently and non-permanently protected areas that include public spaces such as National Parks, Nature Reserves, State Conservation Areas, Flora Reserves, Crown Reserves, Council Reserves, etc. They also include private spaces, such as lands permanently protected under Voluntary Conservation Agreements, Property Vegetation Plans, and offset sites. Other sites managed for conservation under other models and instruments across the Region (for example restrictions as to use under S88B of the Conveyancing Act 1919 or within conditions of a development consent.



It assists biodiversity conservation and management to know the location of these permanent protected areas and recognise them under Council's local planning scheme. In addition, for mapping purposes, National Park should be zoned E1 Council and with consultation, Crown Reserves and private lands that are permanently protected should be zoned E2 – Environmental Conservation. Many other Crown reserves are suitable for multiple uses (in keeping with the Principles of Crown Land Management under the Crown Land Management Act 2016) and dependant on the reserve purposes and uses, may not be suited to E2 zoning changes.

Within Council Strategic Planning and GIS Branch have the lead role in mapping locations of all permanent public and private protected areas and recognise these areas within the zoning scheme (E2). Council has been compiling data and information on the locations and types of permanently protected lands. Whilst many of these areas are identified on a Protected Areas Map and are appropriately recognised in the local planning scheme, there are currently gaps in knowledge and data. Some permanently protected public and private lands are not recognised in the local planning scheme thus a consolidated conserved lands map is required.

Actions	Timeframe
2.1.1 Compile and regularly update a Protected Areas Mapping	Short term
2.1.2 Zone all permanently protected areas as E2-zones with regular updates of the planning scheme	Ongoing

30. Hunter Regional Plan (2036)

2.2 Securing land for reserves

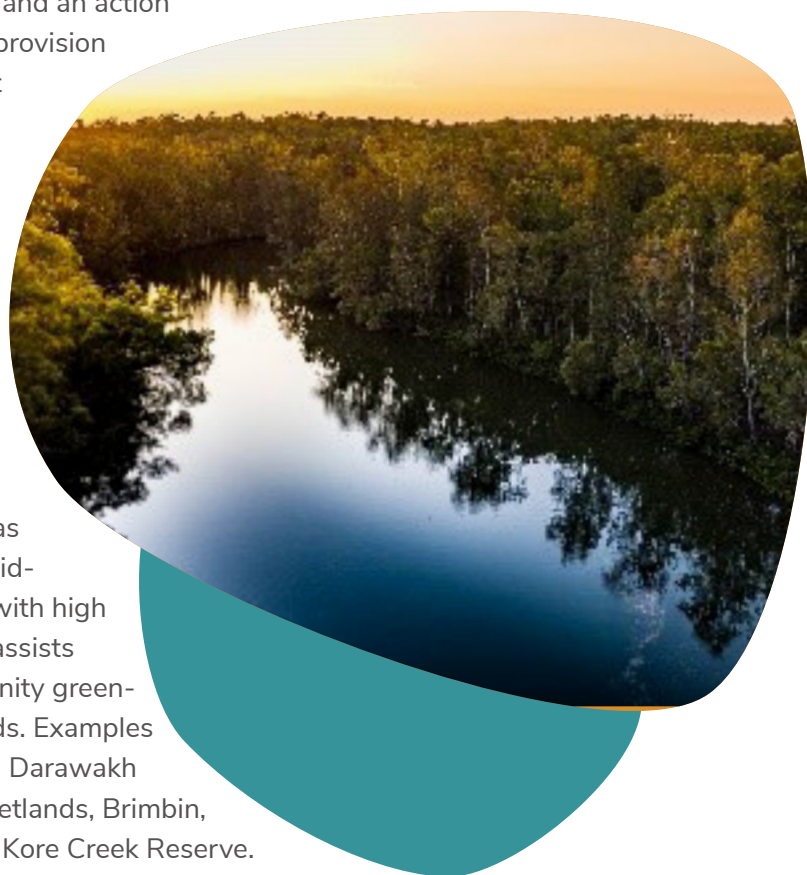
The MidCoast community has expressed its support for ongoing strategic purchase of land for Reserves, particularly those that address ecosystem services and community needs³¹. The securing of land is a function of local government in NSW and an action which benefits the local community through the provision of natural spaces and the protection of important landscapes. Many Australian Councils have a reserve acquisition program in recognition of the community benefits³².

There are several avenues or partnerships available to share the purchase cost of lands for environmental purposes. Land dedications are accepted where adequate resources are provided for long-term conservation management.

Council's land purchase or dedication program has focussed on priority sites: these have included acid-impaired coastal wetlands for remediation, land with high ecosystem services functions where acquisition assists preserve the lands' values and important community green-spaces such as peri urban local conservation lands. Examples are award winning Cattai / Big Swamp wetlands, Darawakh Creek / Frogalla Swamp wetlands, Wallis Lake wetlands, Brimbin, Bulahdelah Plain Reserve, Smiths Lake and Kore Kore Creek Reserve.

In the MidCoast Region, the acquisition programs at Darawakh Creek / Frogalla Swamp and at Cattai/ Big Swamp have received environmental and community awards. Other priorities may include corridors, threatened species protection and water quality.

A policy and guidelines to define principles and investigate options to secure lands, including developing concepts for off setting vegetation in and near fringing urban areas and analysis of the representativeness and adequacy of current reserves, would assist in clarifying priorities for investment.



Actions	Timeframe
2.2.1 Develop a policy and guidelines for securing environmental land	Short term
2.2.2 Investigate a revolving fund or acquisition trust to finance a program of strategic land purchase	Short term

31. MidCoast Council, Biodiversity Framework Targeted engagement October to November 2020 report (2020)

32. Sunshine Coast Environmental Levy (2019)

2.3 Private land conservation

While public conservation reserves are the cornerstone of a Comprehensive, Adequate and Representative (CAR) reserve system, natural areas on private land is important for biodiversity as well as socioeconomically.

In NSW and the MidCoast, the Biodiversity Conservation Trust (BCT) offers and administers a range of voluntary in perpetuity conservation agreements for private landholders, including Biodiversity Stewardship Agreement (BSA), Conservation Agreements and entry-level Wildlife Refuges. Conservation Partners Grants are available to assist landholders to maintain the ecological values of their properties. In the Mid-Coast LGA the BCT currently manages and supports 132 agreements covering over 22,000ha³³.



Council has a role in encouraging private land conservation through functioning as a Land for Wildlife Regional Provider in partnership with Karuah – Great Lakes Landcare and Manning Landcare. This operates within the Community Environment Network, which administers the program across NSW. The scheme is non-binding entry-level option for landholders who want to manage areas of wildlife habitat on their property. It can contribute to biodiversity stewardship outcomes as participants often move to higher, more binding forms of land conservation. In 2020 there were 70 existing Land for Wildlife properties across the MidCoast Region³⁴.

Actions	Timeframe
2.3.1 Review and enhance local procedures and administration of the Land for Wildlife scheme	Short term
2.3.2 Build on and enhance the existing partnership between Council and Midcoast to Lakes Landcare to continually improve the delivery and growth of the Land for Wildlife program	Medium term
2.3.3 Deliver workshops targeted to Land for Wildlife participants	High
2.3.4 Facilitate uptake of higher tier conservation covenants in partnership with BCT	Medium
2.3.5 Facilitate private land conservation in priority areas throughout the LGA	Medium

33. Biodiversity Conservation Trust (2021)

34. MidCoast Council, Land for Wildlife Program status (2020)

2.4 Indigenous protected area

Indigenous Protected Areas are areas of land and/or sea country owned or managed by Aboriginal groups, which are managed as a protected area for biodiversity conservation through an agreement with the Australian Government. Indigenous Protected Areas are an essential component of Australia's National Reserve System, which is the network of formally recognised parks, reserves and protected areas across Australia.

As well as protecting biodiversity, Indigenous Protected Areas deliver cost-effective environmental, cultural, social, health and wellbeing and economic benefits to Indigenous communities. Indigenous Protected Areas protect cultural heritage into the future, and provide employment, education and training opportunities for Indigenous people.

Council can assist Local Aboriginal Land Councils and other organisations deliver economic and social opportunities through land use / strategic planning and can assist deliver and broker Indigenous Protected Areas for environmental and cultural purposes. There are significant outcomes and opportunities associated with the establishment of an Indigenous Protected Area in the MidCoast Region; possibly centred on the Minimbah or Cattai localities.

There is scope to develop a process for assisting Indigenous groups to protect culturally significant landscapes. The concept of developing an Indigenous Protected Area has been raised by several Local Aboriginal Land Councils and other organisations.

Several stakeholder meetings have been undertaken previously. A preferred model for the Indigenous Protected Area may be by way of a partnership between the Local Aboriginal Land Councils and a non-government conservation agency.



Actions	Timeframe
2.4.1 Consider establishment of an Indigenous Protected Area in consultation with Aboriginal people and Government	Medium

THEME 3: LAND MANAGEMENT



3.1 Strategic weed program

Weeds are one of the single biggest threats to our biodiversity.

The environmental values of the MidCoast Region, including Ramsar and World Heritage sites are at risk of the impact of weed threats. Weeds also affect the liveability, tourism, economy and aesthetics of our area and the value and productivity of our agricultural lands. Despite considerable investment by all levels of government, it is not possible or practical to plan to eradicate all weeds from the MidCoast Region. Council weed management programs need to focus on long term, strategic approaches which protect key assets and involve cooperation with all landowners to achieve high level, sustainable weed control outcomes.

Council provides a management response to the multiple threats of weeds within the local government area, in the context of Commonwealth, State and regional weed policy, applicable legislation and community priorities. Councils are local control authorities for weeds under the Biosecurity Act 2015 and are responsible for delivering aspects of regional Weed Action Plans.

Adopting a strategic weeds program will contribute to a range of biodiversity outcomes. Council has compiled a list of priority weeds and undertakes routine weed inspections throughout the LGA. Current focus areas include aerial spraying for bitou bush, an aquatic weeds program especially alligator weed, Amazonian frogbit and Senegal tea plant, control programs for camphor laurel and African olive and weed management in bushland reserves.



Actions	Timeframe
3.1.1 Deliver weed control programs that meet community expectations and legal obligations	Ongoing
3.1.2 Prepare a five-year Weed Management Strategic Plan for the MidCoast Region	Ongoing

3.2 Pest animal management program

Local Government has significant responsibilities in managing the impacts of pest animals. As a landowner and manager, Council shares in responsibility to prevent, eliminate and minimise biosecurity risks under the Biosecurity Act 2015. Under the Local Government Act 1992, Councils also have obligations to manage community land in a manner that protects the features of that land, which may include pest animal controls. There are other legal obligations for Councils in their decision making that can influence feral pest animal management, such as the Companion Animals Act 1998 and the Biodiversity Conservation Act 2015, covering threatened species.

Priority pest animals should be selected based on regional strategies, local impacts, community consultation and impacts to threatened species.

Councils have significant discretionary ability to act with other stakeholders and the wider community to effect feral pest animal control and management. Council Pest Animal Strategic Plans are an important framework for the management of pest animals on Council-managed land and a means to identify opportunities to assist with pest animal management on private land, when funds and resources allow. These plans can identify outcomes, objectives and actions to address and manage the impacts of pest animals, based on the principles of pest animal management (prevention, eradication, containment and asset protection).

Council delivers feral pest animal controls focussed on Council-owned / controlled land. At present, Council does not have a Pest Animal Strategic Plan to guide feral pest animal control efforts. Pest animal management is conducted on a priority basis, as resources permit. Focus areas include development of plans / policies, annual / strategic operations (fox control at Bulahdelah Plain Reserve, threatened shorebird nesting sites, Cattai / Big Swamp and Lower Wallamba - Darawakh – Hallidays Point area and Sambar deer control at Cattai / Big Swamp), reactive operations (rabbit control, cage loans program) and capacity-building.



Actions	Timeframe
3.2.1 Prepare and implement a five-year Pest Animal Strategy for the MidCoast Region	Short term
3.2.2 Develop protocols for managing the impacts of domestic dogs and cats on native wildlife	Medium term

3.3 Council bushland reserves management

Council natural area reserves provide an important contribution to the region's biodiversity. Council land, which includes both community and operational land, as well as Council-managed Crown lands, where the primary purpose is biodiversity or nature conservation are classed as bushland reserves. These reserves play an important role in the well-being of the community and the environment by helping:

- prevent urban heat build-up and reduce energy costs
- increase property values
- promote healthy lifestyles and enhance mental health
- improve air and water quality and prevent stormwater run-off
- sequester carbon and reduce net carbon emissions
- provide for nature-based recreation and important wildlife habitat, including threatened species such as koalas.



Preparing Plans of Management for community lands is a requirement of the Local Government Act 1993. Plans help Council to prioritise actions and manage bushland reserves so that they are healthy, functional and resilient.

Council has 700 parcels of land currently classified as a natural area. There is a program to manage its bushland reserves and invests in a range of management actions, including weed control, pest animal control, ecological / cultural burns, rubbish removal, revegetation, access control, maintenance of management trails. Specific plans of management have been compiled for a set of reserves, including Kore Creek/North Shearwater Reserves, Central Forster Reserves and Cattai / Big Swamp Reserve. In the absence of site-specific plans, reserves are generally managed with generic plans of management, which are progressively updated as resources allow. Mapping and auditing of all Council bushland reserves and reserve plans of management/action plans for these is needed.

Actions	Timeframe
3.3.1 Undertake a management audit for all bushland reserves	Short term
3.3.2 Prepare a plan of management for each Council bushland reserve or group of reserves	Medium term
3.3.3 Adopt a strategic program for the management of Council bushland reserves	Ongoing
3.3.4 Consolidate parcels of Council lands into reserves where appropriate	Medium term

3.4 Significant roadside areas program

Lands within road reserves can be of high environmental value, supporting threatened species, native vegetation and wildlife corridors. Benefits include landscape amenity, ecosystem services, cultural heritage protection, sites for research and education and natural recreation opportunities.

Other than state-significant roads, Council is responsible for the management of roads and road reserves. A set of resources have been developed to assist Council's to better manage roadsides, including the Roadside Environment Program of Hunter Council's Environment Division (2010) and publications of the Roads and Maritime Services and NSW Roadside Environment Committee. These resources include actions to better manage high conservation value roadsides, particularly highest priority sites.

Following work by the Hunter Council's roadside areas program, several significant roadside areas have been identified in the MidCoast Region.

Several other roadsides and road reserves in the MidCoast Region contain assets and values of very high conservation significance, including habitat for endangered ground orchids (eg. Pindimar), corridors for koala movements (eg. Tinonee area) and habitats of regional conservation significance. Whilst attempts are made to manage roadsides in accordance with good practice, there is no suite of tools that coordinate and deliver best practice roadsides management. A strategic and coordinated significant roadside areas program, in consultation with Crown Lands Divisions, for the LGA would help to effectively deliver these and other biodiversity benefits.



Actions	Timeframe
3.4.1 Develop a Roadside Conservation Program, including Significant Roadside Areas scheme	Short term
3.4.2 Identify and declare Significant Roadside Areas	Ongoing
3.4.3 Deliver and monitor a bat boxes under bridges project	Medium term

3.5 Fish and wetland habitat programs

Enhancing fish habitat by repairing degraded wetland systems and restoring fish passage is vital for biodiversity and ecosystems, including food webs. In the period from the early 1900's until the 1980's, modifications of near coastal floodplains, coastal back-swamps and estuarine soil landscapes through clearing, draining, and tidal and flood modification across the Region had profound environmental and economic consequences via the formation and release of naturally occurring acid sulphate from within the soil. These impacts are especially evident at places such as Darawakh Creek, Cattai and Big Swamp, Cooperbrook Wetlands and Moto.

Such alterations have transformed or simplified biodiversity and created serious acid sulfate soil problems. Acidified water run-off from these landscapes pollute river and lake environments and harm aquatic production industries such as prawning and oyster growing. The drivers and consequences of these processes have been well-described in various technical and catchment reports, eg, Lower Manning River Drainage Remediation Action Plan (2016) and the Darawakh Creek and Frogalla Swamp Wetland Restoration Management Plan (2010). Restoring these impaired landscapes results in productivity and biodiversity gains and is therefore an investment in natural capital. Successful remediation and restoration action in local drained wetlands and acid sulfate soil hotspots has been undertaken by scientific research, strategic planning and policy as well as on-ground action, representing contemporary best practice. Examples include award winning Cattai and Big Swamp restoration project as well as the Darawakh Creek and Frogalla Swamp wetland restoration project. At other locations, focus is on stabilising and consolidating acid sulfate hotspots through land acquisition and conservation management. Significant further work needs completing.



Actions	Timeframe
3.5.1 Continue the implementation of the <i>Lower Manning River Drainage Remediation Action Plan</i>	Long term
3.5.2 Focus wetland restoration and management on priorities identified in CMPs	Ongoing
3.5.3 Continue the fish barrier removal program in conjunction with DPI Fisheries	Ongoing
3.5.4 Continue the protection of priority wetland systems in line with the <i>Wallis Lake Wetland Strategy</i> and other plans	Ongoing
3.5.5 Identify, prioritise and monitor priority aquatic refugia and reaches	Medium term

3.6 Biodiversity disaster response and resilience

Having a response in the event of major disasters affecting biodiversity is important as events like catastrophic bushfires, floods, storms and disease outbreaks can have severe environmental, social and economic consequences. The 2019 drought and bushfire emergency, followed by the flood disaster in March 2021, are recent examples of this. These events caused significant local loss of native animals, damage to ecological communities, dispersal of invasive species, the pollution of the waterways and estuaries and impacts on rare or sensitive threatened species and communities.

Council plays a key role in providing for natural disaster response as we are a service provider, land-use planning authority and we represent the local community. A natural disaster response plan for Council, aligning with Federal, State and regional frameworks, would help to prevent and reduce the impacts of events in the future. This could include responding to manmade ecological disasters that affect the environment, including climate change and major pollution events. Any disaster management requires coordinated and targeted programs, science and knowledge, and adequate resourcing and delivery mechanisms to be successful. In response to the 2019 bushfire emergency, Council implemented an action plan, with immediate, medium and long-term actions to assist biodiversity and the natural environment to recover. Review of Councils response to this, and other agencies' response to disasters will assist us to prepare for future scenarios.

One of the most important actions in preparing the natural environment for any disaster is to maintain natural landscapes in a way that fosters resilience. In this way, biodiversity is better able to cope with any disasters and recovery would be faster and more effective. Effective local and regional programs are required to boost the inherent resilience of the natural environment and biodiversity in preparation for future disasters and impacts.



Actions	Timeframe
3.6.1 Maintain partnerships, structures and frameworks, including contingencies, to assist biodiversity cope with disaster events	Ongoing
3.6.2 Monitor the state and condition of local biodiversity and be aware of emerging threats and issues	Ongoing
3.6.3 Review the Council response to the 2019 bushfires to determine a procedure for future incidents	Medium term

3.7 Nature-based recreation

Nature-based recreation contributes significantly to our regional economy and encourages stewardships for natural areas, which in turns promotes and encourages a nature conservation. Popular regional activities include bushwalking, swimming, nature photography, kayaking, camping, fishing, orienteering, mountain and dirt-biking, 4WDing and abseiling/ rock-climbing.

The Hunter Regional Plan 2036 recognises that the region's natural areas contribute to the health of its communities and are important for recreational and tourism activities. One of the key goals of this plan is to support Thriving Communities with Direction 17 providing for Enhances access to recreational facilities and connect open spaces. Within this framework, Council has a developed a Destination Management Plan (DMP) (2017). This plan guides sustainable tourism development over the next 15 to 20 years in the context of a growing market for nature and adventure-based tourism. Tourism is one of the region's most important economic drivers, that is built on the foundation of our natural environment. In 2019, the LGA had over 2.1 million visitors (highest on the North Coast), delivering \$582 million in annual revenue and contributing over 19% of the value of region's gross regional product.

The Plan identifies the regions competitive advantage and looks to a future which more effectively leverages the region's natural assets, local character and environmental credentials to promote the MidCoast as a leading provider of nature and adventure-based tourism. It also recognises that not all recreational uses are compatible with biodiversity values and as such, allows for multiple differing recreational uses. Examples of projects within the Plan include an iconic project of the DMP includes a Great Walk.



Actions	Timeframe
3.7.1 Review and update recreation management in relation to biodiversity	Short term
3.7.2 Develop and deliver nature-based recreation projects, including those identified in the Destination Management Plan	Ongoing

3.8 Fire management

Fire management is a key issue both for the community and for protecting and enhancing biodiversity. MidCoast Council lies within the MidCoast Bushfire Management Area, under which every 5 years a Bushfire Management Plan (BFMP) is endorsed through a committee. This assesses key villages, towns, structures at risk and provides a risk rating for each and provides the basis for funding each organisation from the Rural Fire Service (RFS).

There are significant conservation assets within Council reserves, such as the fragmented urban Forster squirrel glider populations, that are highly vulnerable to the impacts of uncontrolled fire. Management plans enable council to plan and implement fire preventative and mitigation actions that reduce the threat of single wildfire events having catastrophic impacts on species and their habitat. Fire management plans complement broader reserve plans of management and consider ecological and community values to ensure the needs of all stakeholders are addressed and to maintain ecological function and values.

Ecological burning in suitable locations is a valuable tool incorporated into fire planning to reduce fuel loads and assist regeneration of plant species.

Community engagement can promote best practices and bush management for homeowners adjoining council owned reserves and living in fire prone areas.

Council has historical BFMPs for some individual villages, but do not yet cover the current LGA. At present, fire management is predominantly based around APZ management. Ecological burns have been undertaken in select council reserves to reduce the threat of single wildfire events having catastrophic impacts on species and their habitat. There is no dedicated officer responsible for planning and implementation of APZ and ecological burns. A suitably qualified Bushfire Officer would enable council to help effectively manage fire risk across Council natural reserves.



Actions	Timeframe
3.8.1 Prepare bush fire management plans for priority natural reserves which consider Aboriginal cultural burning, ecological burning and hazard reduction	Short term
3.8.2 Prepare and implement Council-wide fire management strategy	Short term
3.8.3 Promote ecological and cultural burning programs across all land tenures with relevant Aboriginal communities and organisations, including capacity-building	Medium term

THEME 4:

SCIENCE AND KNOWLEDGE

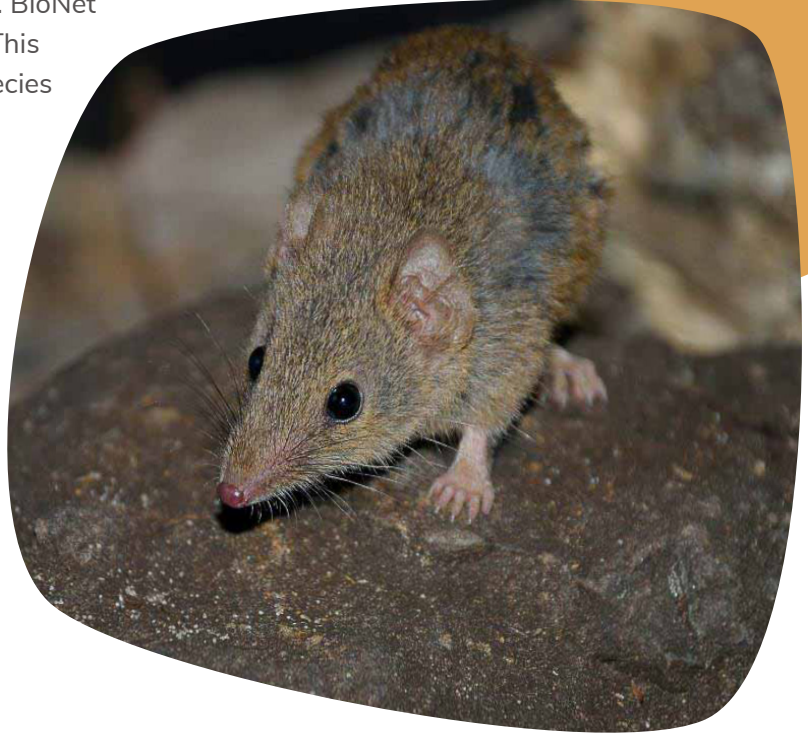


Artwork by Amanda Davis

4.1 Understanding our flora & fauna species diversity

Effective management of biodiversity requires an understanding of biodiversity values and assets, including species diversity. The compilation of accurate data on the types of native plant and animal species that occur in the MidCoast Region and an understanding of the status and trends for these species is important. BioNet contains data on species records in the region. This data can be used to identify priority or focus species and can assist adaptive conservation planning, the identification of priority areas and the delivery of targeted on-ground conservation actions. Species will be of special conservation significance (and thus prioritised for conservation action) if they are:

- Listed threatened species, or
- Naturally rare or naturally highly restricted in distribution, or
- Now rare or highly restricted in distribution due to loss of habitat or other causal factors, or
- Seriously decreasing in population, or
- Seriously inadequately reserved in conservation reserves, or
- At the limit of its natural distribution, or
- Endemic to the Region and found nowhere else in NSW



Flora and fauna species lists for the MidCoast Council have not been fully compiled or published. Council has commenced the compilation of lists of native plant and animal species that are known to occur or which once occurred in the Region and assessment of the legal status, the abundance and distribution status and the population trends of each of these species.

Actions	Timeframe
4.1.1 Compile a list of native animal and plant species from the Region including their status and trends	Short term
4.1.2 Publish an information brochure on the native species of the Region and their status	Short term

4.2 Biodiversity research

While biodiversity in the Region is rich and important to our economy and way of life, biodiversity data is relatively limited. One means of obtaining biodiversity information is university and research agency partnerships and via the administration of a community environmental research grants scheme.

Partnerships and collaboration between Council and Universities and other researchers and organisations can provide great co-benefits and assist effective biodiversity planning and management based on robust, independent and best available knowledge. Collaborations promote knowledge exchange and often use of technologies and methods at the forefront on science. Fields of research range from remote sensing, connectivity modelling, wetland habitat restoration and fishery linkages. MidCoast Council frequently collaborates, partners with, and engages University and research organisations for applied scientific purposes. This ranges from student placements and ARC grant linkage applications, co-funding Honours, Masters, or PhD research, and commissioning independent scientific studies.

Council currently supports university research into topical local and regional issues through the Australian Research Council (ARC) grants scheme, where Council funds post-graduate university research. There is a successful history of this through fields such as acid sulfate soil management, carbon in wetlands and nutrients and their effects in the catchment landscape. A dedicated small grants scheme to address biodiversity data gaps would be a valuable opportunity to complement current research investment across our Region. These allow the council to direct information gathering and data to issues that are a priority. The Lake Macquarie City Council is one example of a Council which has successfully operated an environmental research grants scheme. Schemes of this nature require effective resourcing, but also proper governance, administration and application, but can be very successful in generating local data on local information gaps and issues. A priority should be given to research that is applied and can assist in managing local biodiversity issues in a best-practice way.



Actions	Timeframe
4.2.1 Investigate the feasibility of a biodiversity research grants scheme	Medium term
4.2.2 Seek opportunities to collaborate with University and research organisations to address knowledge and data gaps in an applied science approach	Ongoing

4.3 Vegetation mapping & monitoring vegetation change

Classifying and mapping vegetation communities is an important for strategic biodiversity conservation planning and natural resource management. Vegetation mapping allows quantifying vegetation cover and its change over time important for informing vegetation protection and restoration. As more information is generated on the description and extent of local vegetation communities, knowledge of the status of specific vegetation communities can be improved. Vegetation mapping can be used for a whole range of additional purposes (e.g. species habitat models, predictive population viability assessment, connectivity assessment and bushfire hazard mapping).

Vegetation communities are of special conservation significance (and thus prioritised for conservation action) if they are:

- Listed endangered ecological communities, or
- Naturally rare or restricted in natural distribution, or
- Now rare or restricted due to the loss of habitat or other factors, or
- Seriously decreasing in extent, inadequately reserved, or
- At the limit of its natural distribution, or
- Endemic to the Region (found nowhere else in NSW)

While vegetation community mapping and description exists for certain areas and the coverage of adequate mapping is progressively increasing, at present there is incomplete and adequate vegetation community mapping data on the status of communities across the entire LGA.



Actions	Timeframe
4.3.1 Compile fine-scale vegetation community description and mapping for priority areas	Short term
4.3.2 Compile fine-scale vegetation community description and mapping for the entire MidCoast Region	Medium term
4.3.3 Assess the current status of vegetation community types across the LGA, including for rarity and representativeness in conserved lands	Medium term
4.3.4 Adopt a process to review and update mapping to maintain currency	Medium term

4.4 Mapping of important biodiversity and ecosystem service value lands

Identifying priority biodiversity assets and areas is the foundation of effective conservation planning and action. It allows agencies to deliver better strategic planning outcomes, develop a terrestrial biodiversity spatial layer in the Local Environmental Plan, assist the NSW Biodiversity Conservation Trust deliver offsets, identify critical linkages and biodiversity hotspots and assist reserve identification and establishment processes. Mapping ecosystem service value lands will help Council understand how they contribute to wellbeing and knowledge to underpin policies. Identifying and managing habitats that support the continued health and integrity of receiving waterbodies (lakes, rivers, estuaries) for biodiversity, as well as critical community needs, such as supply of drinking water is a priority. Indicators for lands of high ecosystem services values include:

- steep land (vegetated and unvegetated)
- lands of high acid sulfate soil risks
- littoral rainforest
- riparian zones and foreshores, and wetlands.

Contemporary mapping of high biodiversity conservation lands and high ecosystem services value across the Region is needed for conservation and management. In 2015, the Hunter and Central Coast Regional Environmental Management Strategy included a Biodiversity Investment Prospectus, that included connectivity and conservation priority mapping. There are knowledge gaps of what proportion of the biodiversity is protected or represented in these reserves or what biodiversity values remain at risk. In 2016, Council undertook a catchment mapping in The Branch sub-catchment of the Karuah River in order to assist natural resource management intervention prioritisation. The catchment evaluation, education and engagement and scientific spatial analysis undertaken may be used as template for future mapping.



Actions	Timeframe
4.4.1 Map and communicate important biodiversity conservation and high ecosystem services values lands	Medium term

4.5 Sub-catchment terrestrial landscape health reports

Devising and implementing a system to track terrestrial landscape health will complement the waterways reporting and inform catchment management for biodiversity, as well as providing a monitoring tool in critical water supply catchments. There are scientific models that are based around an understanding of increasing loss and modification of native habitats. For instance, below 60% habitat cover can result in a loss of ecological connectivity. As such, a terrestrial landscape health assessment process based on factors such as native vegetation cover, connectedness of habitat and extent of conservation is a very useful and informative process.

The four levels of indicators with associated outcomes are:

1. Composite indicators which allow reporting on overall state of biodiversity (e.g. extent of native vegetation cover),
2. Key indicators of regional biodiversity (e.g. invasive plants, threatened species, sensitive bird species) with associated thresholds (triggers or targets),
3. Indicators for monitoring long-term trends (e.g. water quality guidelines), and
4. Supporting baseline indicators



Currently, there is no terrestrial landscape health assessment process for the Region.

Actions	Timeframe
4.5.1 Develop, adopt and publish an annual program of sub-catchment terrestrial landscape health assessments	Medium term
4.5.2 Regularly revise landscape health assessments to inform on-ground actions	Ongoing

4.6 Climate change

Good planning and design and implementing key strategies will be fundamental to protecting biodiversity and building greater resilience to the impacts of climate change in the MidCoast Region. Climate change is likely to result in conditions that may cause more frequent and intense hazards and are likely to be a serious long-term threat to biodiversity. Climate change projections in the region according to Adapt NSW³⁵ and the Bureau of Meteorology³⁶ include:

- Increased temperatures and increased number of days >35 degrees
- Decreased average annual rainfall across most of Region (5 - 10%)
- Decreased stream flow
- Increased fire danger
- Increased heavy rainfall events
- Increased frequency of coastal storm surges, sea level rise and coastal erosion.



In 2019, the Biodiversity Node led by Macquarie University, under the NSW Adaptation Research Hub, delivered tools and products to increase knowledge of the capacity of species, ecosystems and landscapes to adapt to climate variability. This includes ecological data and information, weed, pest and disease risk, managing changing landscapes and climate impacts on freshwater, estuarine and coastal ecosystems³⁷.

The most vulnerable ecosystems in the MidCoast Region include coastal areas, alpine areas, rainforests, fragmented terrestrial ecosystems and areas vulnerable to fire or low freshwater availability. Species that could become extinct include those living near the upper limit of their temperature range, those with restricted climatic niches and those unable to migrate to new habitats.

The NSW Government has prepared the guide *Priorities for Biodiversity Adaptation to Climate Change*³⁸, to help species and ecosystems cope with the impacts of climate change. The priorities of this plan are:

- Enhancing understanding of the responses of biodiversity to climate change and re-adjusting management programs
- Building a comprehensive, adequate and representative reserve system
- Increasing opportunities for species to move across the landscape
- Assessing adaptation options for ecosystems most at risk.

Council has developed a Climate Change Policy and Strategy with considerations for impacts on biodiversity, however it is important that climate change impacts on natural environment be included in all relevant Council plans and actions and risks assessed regularly with Council's assessment process, with adaptation plans prepared for high to extreme risks.

Actions	Timeframe
4.6.1 Ensure climate change impacts on biodiversity is included in all relevant plans and actions, the risks to biodiversity are assessed regularly in conjunction with Council's risk assessment process.	Ongoing

35. NSW Department of Planning, Industry and Environment (2020) Adapt NSW: Climate projects for the Hunter Region website

36. Australian Government Bureau of Meteorology (2020) Climate change – trends and extremes

37. NSW Department of Planning, Industry and Environment (2019) Adaptation Research Hub <https://climatechange.environment.nsw.gov.au/Adapting-to-climate-change/Adaptation-Research-Hub>

38. Department of Environment, Climate Change and Water NSW (2010) Priorities for Biodiversity Adaptation to Climate Change, Sydney.

4.7 Aboriginal cultural and community knowledge

Integrating Aboriginal cultural knowledge in environmental and land use decision-making and engaging with other community knowledge holders can hold great environmental as well as social benefit. The Gathang-speaking people are the traditional custodians of the lands and waters of the MidCoast Council area. Many Aboriginal and Torres Strait Islander people continue to reside in the area. Natural features are at the core of the cultural heritage for Aboriginal communities; conserving these assets and respecting the Aboriginal communities' right to determine how they are identified and managed will preserve some of the world's longest standing spiritual, historical, social and educational values.

Goals identified by one of the region's local Aboriginal Land Council are to:

- Provide indigenous solutions for restoring our country
- To provide environmentally sound educational opportunities for the community
- Gain recognition of Ranger and Green Teams and
- To build enduring and respectful partnerships³⁹.



As well as National and State-based technical experts, biodiversity knowledge-holders within the MidCoast community have potential to contribute to discussions relating to priorities, needs and audits of Council's biodiversity management, as well as peer review, from a range of relevant experts to inform and/or review Council's biodiversity conservation agenda. There currently limited outlets for community knowledge-holders or independent biodiversity experts to provide contributions to the biodiversity management and planning within Council. Council seeks independent expert advice across a range of knowledge areas and administers community knowledge holders and reference panels for processes such as catchment planning, coastal planning and estuary management planning.

Actions	Timeframe
4.7.1 Establish a framework to engage with and collect information from community and expert knowledge-holders	Ongoing

39. MidCoast Council (2020) Biodiversity Framework Targeted engagement October to November 2020 – Worimi Green Team



THEME 5: **STRATEGIC PLANNING AND POLICIES**



5.1 Local conservation action plans

Good planning and design are fundamental to protecting the environment, connecting natural areas and building greater resilience. Conservation Action Planning (CAPs) provides a format for balancing environmental and biodiversity protection with land uses in a local or sub-regional context. These Plans are principally land use plans, but also inform specific biodiversity actions.

They involve collecting information on biodiversity values and assets, understanding biodiversity condition, viability and threats, identifying priorities and setting measurable biodiversity goals and targets, developing strategies, taking actions, and adaptively monitoring / measuring outcomes. The plans determine where to focus attention, actions and how they should be implemented, and an evaluation process. Each plan will identify specific targets and performance indicators. They can be useful in identifying actions to balance the effects of development, helping to achieve liveable communities. Understanding the communities' values and priorities, is a core part of CAPs.

With no CAPs at present, preparing and implementing plans in a standard format for a set of priority areas will be an important step for local and regional biodiversity protection. Brimbin is a priority area as it contains a significant growth area (Brimbin New Town), Tinonee is a priority to support and enhance a significant koala population.



Actions	Timeframe
5.1.1 Develop a standard format for Council Local Conservation Action Plans	Short term
5.1.2 Develop Conservation Action Plans for Brimbin and Tinonee	Short term
5.1.3 Develop a Conservation Action Plan for Darawakh to Khappinghat	Medium term
5.1.4 Identify additional priority areas for preparation of Conservation Action Plans	Long term

5.2 Tops to Coast strategy and mapping

The Hunter Regional Plan 2036 (HRP) recognises the importance of biodiversity corridors and linkage, for supporting ecological processes for plants and wildlife movement, habitat and improving adaption to changes in habitat and climate. Corridors also have significant scenic and recreation values. Preparing a regional Corridor Strategy is key to helping protect and enhance connectivity across the Region and is identified by the community and stakeholders as a key Council biodiversity activity .

Corridors can comprise:

- stepping stones of discontinuous patches of vegetation
- continuous lineal strips of vegetation along riparian strips
- part of a larger habitat area eg a national park or State forest.

The following major biodiversity corridors and linkages where large areas of remnant vegetation could be connected to form a network are :

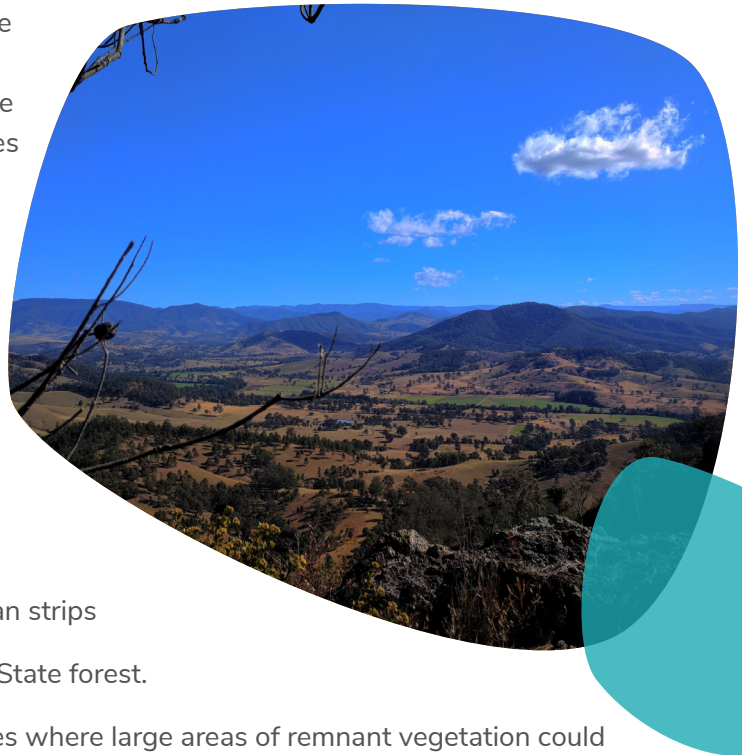
Barrington Tops to Myall Lake Link - between Barrington Tops National Park and large patches of existing vegetation in the Myall Lakes and Port Stephens areas and

Manning River Link - fauna corridors and large vegetation patches between Barrington Tops and Woko national parks across the Manning River floodplain to coastal reserves.

Any coast to range linkages could provide “ribs” to the “spine” of the Great Eastern Ranges corridor, a 2,800-km conservation corridor that crosses the western parts of the Region.

A variety of sub-regional corridor mapping projects have been undertaken for the LGA, either at the State scale or only cover part of the LGA. These include Tops to Lakes Strategy (2014) and priority corridors mapping for the Karuah and Myall Lakes catchments (2018).

Protecting and enhancing mapped corridors can be achieved through a holistic approach across both public and private lands, for example using private land incentive programs.



Actions	Timeframe
5.2.1 Identify and map wildlife corridors in priority areas	Short term
5.2.2 Prepare and implement a Tops to Coast Biodiversity Corridors Plan	Medium term

5.3 Threatened biodiversity management guidelines

The MidCoast Region contains regionally and state-significant areas of habitat for species and threatened ecological communities. Threatened Biodiversity Management Guidelines help protect these assets by informing strategic land use planning and considerations in the assessment of development applications. Research, information gathering and review are particularly important to allow these assets to be adaptively managed for best conservation outcomes.

Recognised priorities include littoral rainforest, coastal saltmarsh, Themeda grassy headlands on coastal sea-cliffs, lowland rainforest and coastal and floodplain forests and wetlands. Priority threatened species in our region include threatened shorebirds (nesting sites), squirrel gliders (Forster), yellow-bellied gliders (Smiths Lake), Manning River helmeted turtle, Grevillea guthrieana, terrestrial orchids, Giant Dragonfly, Manning threatened eucalypts (*Eucalyptus glaucina*, *E. largeana* & *E. seeana*), grey-crowned babbler (Gloucester) and the koala.

Threatened Biodiversity Management guidelines have generally not been developed or implemented in the MidCoast Region, for at least Council's component of species and communities management. Of the existing plans, there is a Grey-crowned Babbler Retention Plan for Gloucester and a Squirrel Glider study for Forster. Council is actively working as part of a multi-stakeholder effort to protect and restore nesting outcomes for threatened shorebirds at the Manning River entrances and Winda Woppa and to protect the Manning River helmeted turtle across its geographic range. Council has several koala studies underway to assist scientific knowledge of the status, distribution and trends of koala populations, particularly in the Kiwarrak area. Detailed mapping of coastal wetlands and littoral rainforest has been undertaken for most of the LGA.



Actions	Timeframe
5.3.1 Prepare management prescriptions for priority local threatened species and communities for implementation by Council	Medium term

5.4 Coast and catchment management planning

The MidCoast Region has 12 major sub-catchments, several of which cover vast areas, including the Manning Catchment which provides drinking water to much of the LGA. The importance of catchment management for biodiversity, as well as sustained water quality and security is recognised in the Hunter Regional Plan 2036.

As part of coastal reforms, in 2016 the Coastal Management Act was introduced, with the Coastal Management SEPP and Coastal Management Programs (CMPs) forming part of the Coastal Management Framework in NSW. Local Governments are responsible for developing CMPs with the Department of Planning and Environment (DPIE).

Certified CMPs must be integrated with Council DPOP and IP&R Framework. CMPs set the long-term strategic direction for co-ordinated management for the coastal zone, which includes many biodiversity and ecological assets, including coastal wetlands and littoral rainforest as management areas.

Catchment and coastal plans are in different stages of development, completion and/or certification in the MidCoast Region. Plans currently in development under the new Act include the Manning River Estuary CMP, and the Manning Old Bar-Manning Point CMP. A scoping study has been prepared for the Open Coast. Manning Valley CZMP, Great Lakes CZMP and Jimmy's Beach CZMP were certified under the previous Coastal Protection Act 1979. Wallis Lake catchment, the Smiths Lake CZMP and Karuah CZMP are not certified. The Manning River has an outdated estuary management plan. There are no plans in place for Myall River, Khappinghat and Kore Kore Catchments. The DPIE currently provides in-kind funding for plan development. Actions in CMPs may be funded through the NSW Government Coastal and Estuary Grants Program.



Actions	Timeframe
5.4.1 Consider biodiversity in development and implementation of all CMPs	Medium term

THEME 6: **LAND USE PLANNING AND DEVELOPMENT**



6.1 Land use planning

Local Government plays an important role in land use planning. It has significant responsibilities associated with planning for and managing the sustainable development of local communities. These are delivered through:

- Administering and amending planning instruments such as Local Environmental Plans (LEPs) and Development Control Plans (DCPs),
- Compiling, communicating and delivering planning strategies, studies, policies and practices,
- Providing advice to the New South Wales Government in relation to land use planning and the environment, and
- Engaging with the community with respect to land use planning.

Land use planning provides a platform for delivering biodiversity and environmental outcomes for the community.

Council's Delivery Program & Operational Plan identifies biodiversity-related objectives within the strategic planning framework.



Actions	Timeframe
6.1.1 Ensure there is a mechanism for the identification and protection of high conservation lands in the Land Use Planning controls and strategies	Short term

6.2 Biodiversity Impact Assessment (Development)

The MidCoast Region will continue to be subject to development demand in the future. Well-planned development and balanced growth are important to the communities' social and economic wellbeing.

All relevant planning proposals, strategies and instruments are referred to and receive biodiversity assessment advice. Council has a suite of tools through local environmental plans and development control plans within the considerations and constraints of State-wide legislative framework. Development proposals are generally controlled and regulated by NSW legislation, including the *Environmental Planning and Assessment Act 1979* and *Biodiversity Conservation Act 2016*, through the LEP, DCP and other plans and legislation.

Council has responsibilities in relation to development assessment which can have a significant influence on the condition, function and health of biodiversity. Biodiversity input is provided to development assessment and is subject to ongoing improvement processes. This includes standardising processes, interpretive material and procedures and practices and documentation of standard conditions. Establishing a consistent approach to development assessment will enable analysis of the cumulative impact of development. A program to audit the effectiveness of development decisions on biodiversity will assist in this ongoing improvement.



Actions	Timeframe
6.2.1 Develop and implement a standardised process for biodiversity assessment	Medium term
6.2.2 Review and adopt a local biodiversity offsets policy for significant developments	Medium term
6.2.3 Undertake a program of compliance of significant development consent	Medium term

6.3 Biodiversity Impact Assessment (Council activities)

Delivering standardised, best-practice biodiversity impact assessment for Councils activities is important as Council itself is responsible for delivering a range of projects, activities and services which may have environmental impacts. Some activities undertaken by government departments or agencies (including Council), which are part of their everyday responsibilities do not require development consent and / or can be carried out without consent or as exempt or complying development under the State Environmental Planning Policy (Infrastructure) 2007. For these activities, environmental assessment is often undertaken under Part 5 of the Environmental Planning and Assessment Act 1979. The Review of Environmental Factors is the document in which Part 5 Assessment is delivered.

The Part 5 assessment system ensures public authorities consider environmental issues before they undertake or approve activities that do not require development consent. If an activity is judged by the relevant public authority to 'significantly affect the environment' an environmental impact statement will need to be prepared and considered by the public authority. Part 5 Assessments also need to consider the impact of an activity on threatened biodiversity with an option to prepare a Species Impact Statement or opt into the Biodiversity Offset Scheme. There is a standard process for Part 5 Assessments for Council. Reviews of Environmental Factors (REFs) are prepared by Council or its contractors for its' activities.



Actions	Timeframe
6.3.1 Review and implement an improved and consistent Part 5 Assessment Process	Short term
6.3.2 Review and implement the Offsets Procedure for impacts for biodiversity impacts associated with Council activities	Ongoing

6.4 Development Incentives for Conservation

There are several mechanisms where incentives for conservation can be included in development.

A biodiversity incentive clause is an option for permitting development within the MidCoast LEP that may otherwise not be possible in exchange for a significant biodiversity benefit.

Subdivisions are a type of development that can allow for a range of outcomes including conservation outcomes through dedication and/or environmental restoration.

Rezoning of land also provides an opportunity to achieve biodiversity gain.

These outcomes are important, recognising that land development is a cause of habitat and vegetation loss and biodiversity decline. Development is usually facilitated by identifying the ecologically sensitive and valuable areas of a site, and concurrently identifying the footprint of an area of development where biodiversity and community impacts are either avoided or within acceptable limits.

Development assessment clauses are available in our current LEPs and will be reviewed in the development of the MidCoast LEP.



Actions	Timeframe
6.4.1 Investigate a biodiversity incentive clause in a MidCoast Local Environment Plan	Medium term

6.5 Greening strategy

Increasingly councils throughout Australia are developing Greening Strategies that recognise the value of trees and other vegetation in the urban and non-urban landscape for social, economic and environmental benefits. The State Government's recognition of the value of urban trees, vegetation and biodiversity is captured within Greener Places – establishing an urban green infrastructure policy for New South Wales 2017⁴⁰.

Benefits range from improved air and water quality, urban cooling effects and landscape amenity to increased property values.

With significant growth across the MidCoast, especially in our coastal centres, we need to ensure that the high levels of liveability and environmental amenity that our region is renowned for is maintained.

A Greening Strategy for the MidCoast is currently being developed, which will outline how Council can manage, maintain and enhance the tree canopy coverage and green spaces.



Actions	Timeframe
6.5.1 Support implementation of the MidCoast Greening Strategy	Ongoing

40. New South Wales Government (2017) Greener Places – establishing an urban green infrastructure policy for New South Wales 2017.



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