

# Wingecarribee Environment Strategy

**2012 - 2017**

## Enhancing our Natural Assets and Capacity

**Version 2.4**

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# 1. Summary

This Environment Strategy 2012 – 2017 is key to Council’s planning for improved environmental management and sustainability. It follows through the commitments in the Community Strategic Plan: *Wingecarribee 2031+ Our Future Our Choice* and builds on previous work by Council and the community to protect and enhance the local environment.

This strategy establishes a systematic approach based on the Australian Government’s NRM MERI Framework and brings together foundational activities and cultural change programs which support and augment the works directly associated with the protection, rehabilitation and enhancement of our natural assets. Council is aiming for best practice environmental management.

Focus Areas and objectives of the strategy are:

## 1. Biodiversity Conservation

- Reduced impact of invasive weeds
- Net increase in native vegetation extent
- Increase area of significant native vegetation conserved to reduce threats to biodiversity resilience
- Enhanced capacity of Council and community to protect and restore natural ecosystems

## 2. River Health and Wetlands

- Improved water quality management for our major rivers and creeks
- Improvement in the health and function of our riparian areas

## 3. Sustainable Living

- Continuous improvement in waste avoidance and resource recovery
- Reduced usage of fossil fuels and carbon emissions within Wingecarribee Shire
- Majority of community actively chooses sustainable products and services

## 4. Community Capacity and Commitment

- Improved access to information to enable our community to act on local environmental issues
- Increased support and skills development for environmentally active members of our community
- More effective communication of planning and results of environmental activities within our community
- Significant increase in leveraging environmental education/incentive projects available from NGOs, NSW and Australian Governments

## 5. Environmental Systems

- Monitoring, evaluation and reporting system in place to support best practice Natural Resource Management and environmental program performance
- Foundations for NRM Asset Management are in place
- Risk to environment is reduced through regulation, enforcement and development of Council systems and processes

The Environment Strategy directs the actions and facilitation roles that Council will undertake over 2012 – 2017.

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## 2. Environment Strategy in Context

### ***Our Unique Shire***

Wingecarribee Shire exhibits a wealth of biodiversity values. This is largely due to the variations in climatic and geographic characteristics across the Shire, from the warm temperate rainforest on the edge of the Illawarra Escarpment to the tall forests and woodlands of the Southern Highlands and the spectacular sandstone gorge country of the Nattai Plateau.

The vegetation within Wingecarribee Shire has evolved over time into the diverse range of communities present today. Many of these communities have evolved on soils and under climatic conditions that are not found outside the Shire. Consequently, there are several vegetation communities that are endemic to the Southern Highlands area. Of these a number are located on fertile basalt or shale based soils. These same soils are also the most productive for agriculture and in many locations the vegetation has been substantially cleared. In some instances clearing has occurred to such an extent that the vegetation communities are at risk of extinction and have been listed as 'Endangered Ecological Communities' under the Threatened Species Conservation Act (1995) and the Environment Protection and Biodiversity Conservation Act (1999). In addition, these communities are often host to a number of plants and animals that rely on them for habitat. Consequently, the Shire is home to a number of species that are under threat of extinction, are restricted in distribution or are at the limit of their known range.

In the late 1990s, Wingecarribee Shire Council recognised the need to address an array of environmental issues which had accumulated in the Shire over a period of rapid population growth spanning at least two decades. Some of these problems include the proliferation of environmental weeds, the choking of our watercourses, the clearing of endangered vegetation and the maintenance of water quality in the important catchment areas of the Shire. Population growth in the Shire has aggravated environmental problems which in turn have threatened the lifestyle values which are central to life in the Highlands and the popularity of the Shire.

### ***Purpose of Strategy***

The scope of the Strategy is intended to identify and target those areas of environmental management that require further action and are largely over and above that which is already in place across Council's varied services. For example, Council's Water and Sewer services employ best practice planning and management and further actions in this area are not specifically included, however these services will be included for actions associated with reviews of environmental systems. Therefore the focus is on the activities that will ultimately provide the biggest changes and place Council on the most direct path to positive outcomes in our local environment.

This Strategy has been developed to assist Council in the management of natural resources in the Wingecarribee. It will ensure that appropriate consideration is given to performance based direction for the delivery of environmental projects, providing accountability for expenditure and develop monitoring and reporting guidelines for ongoing adaptive environmental management.

The document also serves as a public statement of Council's commitment to environmental management for the long term sustainability of the Wingecarribee natural environment. The Strategy is part of the overall planning framework for the Wingecarribee environment and does not attempt to provide detailed management prescriptions for individual areas of responsibility and projects.

The Strategy outlines key focus areas proposed for the management of the Wingecarribee with a particular focus on the next 5 years. Under its framework, Council will continue to undertake day to day management activities, but with a greater level of coordination and consistency. The Strategy is not a statutory document, however by adopting the content of this document, Council will agree to implement objectives and achieve targets outlined within. These will be put into effect by relevant Council staff and the community guided by Council, Environment and Sustainability Committee, government policy, plans of management, management plans and other Natural Resource Management (NRM) agencies.

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The Strategy contains objectives for environmental improvement which are intermediate outcomes in the longer term and aspirational outcomes of environmental sustainability. Management actions and progress will be assessed through a Council and community based monitoring program. The Strategy will guide the investment in sustainable natural resource management and provide support for individuals and the community to work together.

## **Strategy Review Cycle**

It is intended that the Environment Strategy is used as one of Council's key strategic documents within the Integrated Planning and Reporting framework. It is important that the Strategy be revisited and appropriately updated at the same frequency as the Resourcing Strategy and the Community Strategic Plan documents as each of these are interdependent with respect to goals, priorities and resources.

The next review is due January 2013 in order to evolve an alignment with Council's Delivery Program of 2013 – 2017. This will also be an opportune time with the possible cessation of the current Environment Levy in June 2013 if an extension is not approved. The subsequent review should be scheduled for January 2017 but would also be dependent on the timeframe under which any further Environment Levy is approved.

## **Relating Documents**

### **Wingecarribee 2031+**

The Strategy aims to address the environmental goals as outlined in the *Community Strategic Plan: Wingecarribee 2031+ Our Future Our Choice*. There is a particular focus on key outcomes over the next 5 years, 2012 – 2017, in order to move towards alignment with the Integrated Planning and Reporting Framework of documents. It is intended that this Strategy and the next Delivery Program 2013 – 2017 will be well aligned with outcomes and actions.

The Environment Strategy aims to support and reaffirm our community's Vision, and in particular the goals identified in Wingecarribee 2031:

#### **Vision:**

In 2031 we will be...“a healthy and productive community, learning and living in harmony, proud of our heritage and nurturing our environment”

Goals under the theme of Environment, in 2031:

- Wingecarribee's distinct and diverse natural environment is protected and enhanced
- Wingecarribee communities live sustainably by choice
- Wingecarribee achieves continuous reduction in waste generation and disposal to landfill
- Wingecarribee community has a carbon neutral economy

## **SoE (State of Environment) Reports**

State of Environment Reporting is adopted at all levels of government and traditionally provides a snap shot of the condition of various aspects of our environment and describes the factors influencing the changes that have been observed. This Strategy has been developed with consideration of the NSW State of Environment Report (2009) and Council's State of Environment Report (2011).

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The three significant areas of concern with respect to changes to pressure on native vegetation within the NSW State of Environment Report (2009) and that have influenced this Strategy are:

*“Land clearing and resultant fragmentation - This is the most severe pressure, affecting about 60% of classes. Abatement is due to introduction of the NV Act and increases in reservation of significant areas of some classes. Intensification is due to coastal and urban development and expansion of plantations and cropping.”*

*“Climate Change - This is the most pervasive threat which continues to intensify with an increasing impact across all classes. Alpine, coastal, rainforest, wetland and arid classes are the most sensitive.”*

*“Invasive species (weeds, feral animals and pathogens) - This is the second most pervasive threat affecting ~90% of all classes, an increase from 75% in 2006. This threat has intensified due to invasion and establishment of weeds and diseases in new areas.”*

The unique issues identified by Council’s SoE Report that have influenced the Strategy are included within the sections associated with each relevant Focus Area.

### **The Previous Environment Strategy**

Environment Strategy Part 1 2010-2015 was released in May 2011 and was developed in order to both direct all on-ground environmental works projects (especially those projects associated with Council’s Environment Levy) and reflect the strategic review of Council’s approach to its environmental and sustainability responsibilities.

It was intended that Part 2 of the Strategy, containing the themes of Systems and Sustainability, was to follow with an eventual merged document available in late 2011. Organisational change during 2011 and a requirement to have the comprehensive Strategy (this document) completed, resulted in forgoing publishing of the originally planned Part 2.

The Wingecarribee Environment Strategy 2012 – 2017 has been further informed by release of the 2011 State of Environment Report as well as additional community feedback via surveys in late 2011 regarding the continuance of the Environment Levy.

### **Other Related Strategies**

The direction of this Strategy is designed to complement and respond to other natural resource management plans and reports. Of specific interest are the NSW state-wide targets for NRM. Following are the targets that are within the scope of the Wingecarribee Environment Strategy:

- By 2015 there is an increase in native vegetation extent and an improvement in native vegetation condition.
- By 2015 there is an increase in the number of sustainable populations of a range of native fauna species.
- By 2015 there is an increase in the recovery of threatened species, populations and ecological communities.
- By 2015 there is a reduction in the impact of invasive species.
- By 2015 there is an improvement in the condition of riverine ecosystems.
- By 2015 there is an improvement in the ability of groundwater systems to support groundwater dependent ecosystems and designated beneficial uses.

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- By 2015 there is an improvement in the condition of important wetlands, and the extent of those wetlands is maintained.
  - By 2015 there is an increase in the area of land that is managed within its capability.
  - Natural resource decisions contribute to improving or maintaining economic sustainability and social wellbeing.
  - There is an increase in the capacity of natural resources managers to contribute to regionally relevant natural resource management.

Source: NSW Natural Resources MER 2010

In addition to the above, this Strategy has also been informed by:

- LEP – Wingecarribee Shire Council 2010
- The Sydney-Canberra Corridor Regional Strategy (DoP 2008)
- Hawkesbury Nepean Catchment Action Plan
- Hawkesbury Nepean River Health Strategy
- Hawkesbury Nepean Biodiversity Strategy
- Hawkesbury-Nepean Catchment Action Plan 2007-2017
- Southern Rivers Catchment Action Plan
- Warragamba and Upper Nepean Catchment Blue Print
- Wollondilly-Wingecarribee Riparian Strategy
- NSW Greenhouse Plan
- NSW Action Plan for Energy Efficiency
- NSW Sustainability Policy
- NSW Waste Avoidance and Resource Recovery Strategy 2007

## ***Resources Enabling Environmental Progress***

### **General Rates**

General funds are allocated across the Council's operations on an annual basis and are assigned to various areas to ensure that all services provided by Council are at a level of service that is acceptable by its ratepayers. The amount of funds available for NRM from general rate income is more often than not insufficient to fund anything other than a base or compliance level of service for its responsibilities. Council has an increasing range of responsibilities for NRM, however the principal responsibilities include:

- Management of community lands and 'open space'
- Vegetation management (roadside vegetation and noxious weeds)
- Biodiversity and landscape management (threatened species conservation, rehabilitation of degraded sites)



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- Flood mitigation and floodplain management
  - Pollution control and environmental management of land, water and air including public health issues
  - Water supply and wastewater (sewerage) management
  - On-site wastewater management
  - Land-use planning (zoning, LEPs)
  - Development of building controls (DCPs, compliance to soil erosion, on-site stormwater management, use of chemicals, etc)
  - Construction and maintenance of infrastructure (roads, drainage systems, recreation/leisure facilities)

Enhanced levels of service in the above can only be possible via access to supplementary funds such as the Environment Levy, grants and other funding avenues.

### **The Environmental Levy**

Council's Environment Levy (previously known as Wingecarribee Our Future Environment Levy or WOFE) was introduced in 2001 in recognition of the need to address an array of environmental issues which had accumulated in the Shire over a period of rapid population growth spanning the previous two decades. The Environment Levy has been reviewed and approved twice since then by the Minister of Local Government. The local community supported it's continuation in both instances. The current levy program is in effect until June 2013.

The Environment Levy has enabled significant achievements in the areas of biodiversity conservation, maintenance and enhancement of our rivers and wetland health, the long ranging affect of community capacity building, and, increasingly in the area of environmental resilience and sustainability in the face of increasing threats and risks to our shire.

Given the success of the Environment Levy to date, Council has decided that it should seek approval for this levy to exist permanently. This would enable long term planning and surety of resources to tackle the wide variety of projects that need to be completed to fulfill our community's expectations and Council's growing environmental responsibilities.

*Implementation of this Strategy is critically dependent on the environment levy remaining in place.*

It is proposed that a continuing Environment Levy would provide resources for those projects that are deemed high priority but are unable to be funded from other sources available to Council, i.e. general rates, other levies or grants. Priority areas may change over time in line with reviews of the Strategy. The following will be the areas (in order of priority) for funding from the Environment Levy:

- a. Conserving our biodiversity
- b. Restoration and maintenance of natural streams and creeks
- c. Activities that minimize resource consumption and waste generation in our community
- d. Educating our community on environmental issues

These priority areas are based on community feedback, assessment of Council's other resourcing avenues and taking a best practice approach to natural resource management.

### **Grants**

Grant available from the state and federal government sources will continue to be a major source of funds for programs associated with the Environment Strategy. Time and resources are allocated by Council to monitor and apply for grants as they become available. During the past 11 years, Council has been successful in accessing grant funding to the value of over \$1 million. It should be noted that this funding usually requires Council to supply a level of matching contribution either through staffing, equivalent funds or volunteer hours.

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An increasing focus on the importance of the environment in our society brings an increased opportunity to access grant funding for projects. Significant funds are being made available under the Caring for Our Country program as well as the Clean Energy Futures program.

### **Volunteers and Other Resources**

Volunteers provide the backbone for many of our programs, especially those associated with the local Landcare groups and Council's own Bushcare groups. It is estimated that at a minimum, the equivalent of \$100,000 per year is contributed by local volunteers in the hours they spend in Bushcare and other environmental programs. This is in addition to the unaccounted support they provide in 'spreading the word' throughout the community that directly affects our community capacity outcomes.

Other funding available to Council that provide some contribution to the environmental programs within this Strategy include Council's Water and Sewer Fund, the Waste and Sustainability Improvement Program (WaSIP), Stormwater Levy and Domestic Waste Charges.

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## **Transitioning to an Asset-based Approach**

Natural Resource Management programs in Australia are becoming more complex and involve many necessary partners to achieve long term objectives for our environment. Many programs are jointly funded by the Australian Government and NSW Government but are expected to be delivered regionally. This approach looks to local councils to implement these programs within their areas of jurisdiction to provide their piece in the integrated puzzle.

The Australian Government's MERI (Monitoring, Evaluation, Reporting and Improvement) Framework has been developed to help guide the monitoring and evaluation of NRM programs and caters for the fact...

*“that many of the desired changes in NRM asset condition may occur over much longer timeframes (possibly 20 to 50 years) than the investment cycles.”*

The MERI Framework provides a program logic to achieve this, and the Wingecarribee Environment Strategy attempts to utilise this logic to underpin environmental programs at Wingecarribee Shire Council. This will ensure that we are employing a best practice approach to NRM and consequently enable our programs to be considered more favorably when seeking grant funding from regional, state and federal partners.

To enable environmental projects at Wingecarribee to be aligned with this national framework it is necessary to adopt:

- An integrated approach to investment and program design
- An asset-based approach to evaluation that promotes target setting for the key asset classes that contribute to sustainable management
- Monitoring program performance in addition to the state of our environmental assets and change over time in the condition of these assets
- Reporting with an emphasis on outcomes and impacts, including at an intermediate outcome stage.

Asset Management Plans at Wingecarribee Council currently only consider council's built assets. This Strategy will commence activities that progress our management systems to include natural asset classes.

The first step in this process is to identify our priority assets, the desired outcomes and the program logic. Commencement of this asset management rollout will use the following high profile assets as the pilot areas for these programs:

<b>Natural Asset Class</b>	<b>Asset</b>
Watercourses	Mittagong Creek
Bushlands	Mt Gibraltar Reserve

## **Monitoring Progress**

Management actions and progress will be assessed through a Council and community based monitoring program. Information from this program will be reviewed by Council's Environment and Sustainability Branch and the Environment and Sustainability Committee each year to make sure lessons are learnt and the Strategy is managed in an adaptive rather than a prescriptive manner, ensuring continuous improvement.

Further information regarding this can be found in the section *Environmental Systems*.

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## ***Related Legislation***

Commonwealth legislation:

- Environment Protection and Biodiversity Conservation Act (1999)
- Clean Energy Legislative Package (2012)

State legislation:

- Environment Planning and Assessment Act (1979)
- Local Government Act (1993)
- Threatened Species Conservation Act (1995)
- National Parks and Wildlife Act (1974)
- Noxious Weeds Act (1993)
- Native Vegetation Act (2003)
- Fisheries Management Act (1994)
- Water Management Act (2000)
- Rural Fires Act (1997)
- Protection of the Environment Operations Act (1997)

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## 3. Focus Areas

There are five focus areas within this Strategy:

- Biodiversity Conservation
- River Health and Wetlands
- Sustainable Living
- Community Capacity & Commitment
- Environmental Systems

These focus areas exist mainly to group factors and activities that when combined, ultimately provide long term beneficial outcomes for our environment as a whole. Throughout this Strategy, each focus area is treated in isolation with its own set of objectives purely for ease of management and future reporting. The relationship between each of the focus areas is complex and interdependent and below is an attempt to explain and illustrate these relationships. The interrelationships between the focus areas/programs should always be kept in mind during implementation of the Environment Strategy.

### **Strategy Objectives**

The objectives established for the Wingecarribee Environment Strategy are as follows:

#### **Biodiversity Conservation**

- 1.1 Reduced impact of invasive weeds
- 1.2 Net increase in native vegetation extent
- 1.3 Increase area of significant native vegetation conserved to reduce threats to biodiversity resilience
- 1.4 Enhanced capacity of Council and community to protect and restore natural ecosystems

#### **River Health and Wetlands**

- 2.1 Improved water quality management for our major rivers and creeks
- 2.2 Improvement in the health and function of our riparian areas

#### **Sustainable Living**

- 3.1 Continuous improvement in waste avoidance and resource recovery
- 3.2 Reduced usage of fossil fuels and carbon emissions within Wingecarribee Shire
- 3.3 Majority of community actively chooses sustainable products and services

#### **Community Capacity and Commitment**

- 4.1 Improved access to information to enable our community to act on local environmental issues
- 4.2 Increased support and skills development for environmentally active members of our community
- 4.3 More effective communication of planning and results of environmental activities within our community
- 4.4 Significant increase in leveraging environmental education/incentive projects available from NGOs, NSW and Australian Governments

#### **Environmental Systems**

- 5.1 Monitoring, evaluation and reporting system in place to support best practice Natural Resource Management and environmental program performance
- 5.2 Foundations for NRM Asset Management are in place
- 5.3 Risk to environment is reduced through regulation, enforcement and development of Council systems and processes

## Relationship of Focus Areas to MERI Program Logic

As described previously, this Strategy looks to transition to the Australian Government’s MERI Framework in its approach to managing our natural resources. The aim of this is to simplify and structure long term management goals that will easily integrate with the programs and targets set by other Councils, CMAs, as well as state and federal government programs that have also adopted the MERI Framework.

The Wingecarribee Environment Strategy can be mapped to the MERI program logic in the following way:

MERI NRM Outcome Areas:	More commonly known as:	Identified in the Strategy Focus Areas
Biophysical	Natural Asset Management	Biodiversity Conservation
		River Health and Wetlands
Social	Cultural Change	Sustainable Living
		Community Capacity and Commitment
Institutional & Economic	Foundational Activities	Environmental Systems

Core to the MERI approach is that continuous investment towards achieving outcomes in all three areas (social, institutional and biophysical) is required to enable and sustain the desired long term outcomes.

For many of the long term biophysical outcomes to be achieved, the first step is to establish the appropriate institutional policies, strategies, programs and plans that can then support the commencement of cultural change and true natural asset management projects.

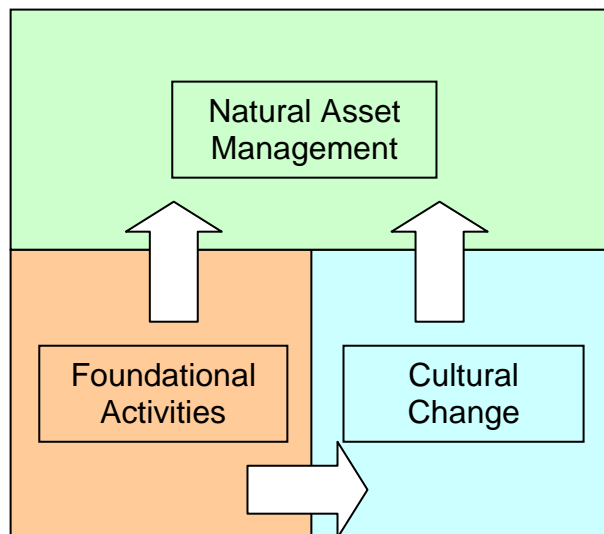


Figure 1: Interrelationships between outcomes and Strategy Focus Areas

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## **Natural Asset Management (Biophysical Outcomes)**

Long Term Goal (Community Strategic Plan 2031+):

*“Wingecarribee’s distinct and diverse natural environment is protected and enhanced”*

Ultimately, the primary outcomes that we desire is that our precious natural resources are maintained, restored, conserved and protected. Of particular value within Wingecarribee Shire is our unique Biodiversity and our River Health and Wetlands. While it is recognized that there are other NRM assets that could be included in this Strategy (i.e. air and land) biodiversity and water assets have a particular focus because of their relative significance and prevalence of issues and also that the scope of management of these areas are more within Council’s direct responsibility and means.

## **Cultural Change (Social Outcomes)**

Long Term Goals (Community Strategic Plan 2031+):

*“Wingecarribee communities live sustainably by choice”*

*“Wingecarribee achieves continuous reduction in waste generation and disposal to landfill”*

*“Wingecarribee community has a carbon neutral economy”*

Environmental outcomes in populated areas are inextricably linked to societal attitudes and cultural habits. Ongoing relationship development between Council and our community on a variety of levels is required to increase awareness and make a foundational shift in everyday behaviour that ultimately affects the health of our natural assets. Through provision of Sustainable Living information, leading activities that modify entrenched habits and promoting increased level of positive interaction with our natural environment Council will help build Community Capacity & Commitment and therefore make a cultural shift in valuing our natural assets.

## **Foundational Activities (Institutional and Economic Outcomes)**

Significant changes in cultural attitude/habits and condition of some assets may not be measurable for periods ranging from 5 to 50 years. In order to support these various timelines and long term changes, robust Environmental Systems need to be in place to measure and report changes in asset state, community behaviour and the performance of Council programs. These systems will take the form of policies, processes and structures that directly support the natural asset management and cultural change. For many outcomes to be achieved these foundation activities need to be completed as a priority (i.e. put in place first) to ensure a firm base and then support steady progress towards the long term goals associated with our natural resources.

## Terminology associated with the MERI Framework

The MERI outcome hierarchy illustrates the fact that outcomes associated with NRM can be iterative and occur at multiple or varying timeframes.

Figure 2 maps the concepts within the Strategy to the MERI outcome hierarchy.

Environment Strategy Concepts	Relationship to MERI Outcome Hierarchy	Examples of Outcomes
Intermediate outcomes and targets achieved within the Environmental Systems focus area	Foundational Activities ⇕	Creation of policies, procedures, planning, benchmarking, assessment and prioritization. Awareness, skills and knowledge base development.
Completion of specific projects and activities that fall within each of the five focus areas	Immediate Activities & Outcomes ⇕	Direct biophysical results from individual projects (e.g. reduced weeds). Enhance NRM engagement, awareness and capacity. Partnerships between individuals, communities and regional organizations.
Achievement of targets and objectives within each of the five focus areas	Intermediate Outcomes ⇕	Institutional, organisational and policy changes. Maintenance and improvement in state of biophysical assets. Enhanced capacity and adoption of sustainable management practices.
Clear positive changes attained in each of the focus areas	Longer Term Outcomes ⇕	Biodiversity conservation being achieved. Rivers and wetlands are observed as healthy. Resource managers have capacity to manage NRM assets sustainably
Attainment of goals as stated in WSC Community Strategic Plan (2031+)	Aspirational Program Goal ⇕	Can confidently state environment goals as fact.

Figure 2: Links between Environment Strategy and MERI NRM hierarchy



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## **Concepts and Terms**

The following pages provide details of outcomes, targets and indicators associated with each of the stated objectives. Below is an explanation of the purpose of each of the terms used.

### **Objective**

Each objective is phrased in present tense in order to create a sense of understanding of the status that we will ideally be in when the objective is achieved. These are general statements that reflect important trends towards achieving the long term outcomes of each focus area.

### **Intent**

This provides a description of why this objective is important, its context and some suggestions as to the methods that will be employed to achieve it.

### **2017 Target**

This is a specific measureable and achievable outcome that we are aiming for that will support the direction of the stated objective. Targets will be restated in annual reports to the community along with the estimated progress.

### **Indicator**

This is a measure that will be made on at least an annual basis that will contribute to the monitoring of progress towards the target and objective. Indicators will be included in annual reports to the community.

### **Intermediate Outcome**

There are often other supplementary positive outcomes made on the journey towards achieving an objective. These interim outcomes are listed as likely stepping stones but are not intended to be exhaustive nor directive. All intermediate outcomes will be reported annually to the community as they are achieved.

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## **Biodiversity Conservation**

### **Overview**

The rich biodiversity of the Wingecarribee Council LGA is conserved at significantly different levels across the LGA. More than half the Shire is bushland protected in national parks such as the Nattai and Morton national parks. The native vegetation communities that are found on the Triassic sandstone soils in the national parks, state forests and SCA 'special areas' are well protected. However, basalt and shale soils are more common in the rest of the Wingecarribee Council LGA and the native vegetation communities that grow on these soils have been extensively cleared.

Biodiversity Conservation is a long term objective common and basic to most environment strategies at all levels of government. Outcomes identified within this focus area are fundamental to the success of this Strategy and encompass direct action associated with Council-managed land, as well as programs that address management of natural areas spanning various landholder boundaries.

### **Natural Areas**

The Shire has a total of approximately:

- 3457 hectares of Council managed bushland reserves;
- 14,718 hectares of state forests (mainly planted pine plantations);
- 84,019 hectares of national park and water catchment land.

This comes to a total of 102,193 hectares which represents 39% of the Shire.

It has also been identified that Ecologically Endangered Communities cover nearly 11,000 ha of the shire. However, this is highly fragmented and located on both privately and publicly owned land including road reserves.

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### **Unique Issues:**

Issues arising from unusually large expanses of natural areas, the number of Endangered Ecological Communities and their increased active use from both residents and visitors include:

- Ratio of natural area under Council responsibility to population is high compared to other Councils resulting in budgetary pressures (i.e. expected to take on more with less resources)
- Increased level of awareness of extent of Southern Highlands natural areas (through tourism and other media) leads to increased active human use of natural areas – with various levels of impact, e.g. bushwalking, picnicking, camping, mountain biking, trail bikes, hunting.
- Provision of adequate amenities such as toilets, picnic facilities & shelters to limit damage to natural areas while supporting increased interaction with our environment
- Location with respect to the Hume Highway link to Sydney and large areas of sheltered bushland gives rise to ideal conditions for littering and rubbish dumping.
- Increased level of service expected for maintenance of walking tracks, lookouts and interpretive signage
- Increased requirement for fire track maintenance and focus on fire management in reserve lands compared to other Councils
- Increased requirement to establish connectivity between disjunct remnants of native vegetation within the Shire and address key threatening processes
- Lack of recognition of cultural features, including indigenous cultural significance
- Worsening issue of weeds in wetland areas
- Increasing requirement for careful NRM management practices (e.g. pest control) in areas bordering National Park and Nature Reserves
- Climate change affects are likely to increase average local temperatures which may influence the spread of invasive flora and fauna. Also, an increase in freak storm events and bushfire could break down any isolated remnant tall forests that occur across the Shire.
- Importance of biodiversity and waterway health on key local industries such as agriculture and tourism.

### **Key Actions:**

Ensure level of maintenance on past bushland project sites keeps them on a recovery trajectory

Create Green Web Strategy and Action Plan to increase landscape connectivity, particularly for EECs

Develop enhanced Plans of Management for each of our significant reserves

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## Objective 1.1: Effective weed management is in place

### Intent

An active program of weed management that employs a comprehensive approach will require an ongoing investment to ensure that:

- new weed species are prevented from arriving,
- newly arrived and naturalized weeds are removed in sites where total eradication is possible,
- the spread or severity of weed infestations are reduced, and
- environmental and community assets are protected from impacts of established weeds.

While ongoing investment is required it is anticipated that the need for this investment will reduce over time due to effective weed eradication and enhanced resilience of the targeted ecological communities.

### 2017 Targets

- 80% of project sites treated for invasive plant control are under scheduled weed maintenance programs and are on a trajectory towards recovery
- Past project sites (including roadside reserves) will have 25% reduction in coverage of target weeds as identified in Weed Management Plans
- Year-on-year reduction of maintenance costs for weeding in targeted Council reserves

Indicator	Source
Area (ha) of terrestrial native vegetation under active maintenance	Operations maintenance report
Area (km) of riparian native vegetation under active weed maintenance	Operations maintenance report
% of Council-managed natural areas under active weed maintenance	Operations maintenance report
Number of new incursions acted on and managed	Operations maintenance report
Area (ha) of priority weeds controlled	Operations maintenance report

### Intermediate Outcomes

Existing weeds and plants of concern are assessed, prioritised and reviewed regularly for each project site

Priority weed controls are guided by Weed Management Plans

Effective weed control processes are in place to eradicate new weed outbreaks and emerging weed threats.

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## Objective 1.2: Net increase in native vegetation extent

### Intent

Improve native vegetation extent by providing improved connectivity and buffering priority vegetation from detrimental impacts. Wingecarribee Shire Council is responsible for the management of various community services and infrastructures within the Wingecarribee Shire LGA. Unfortunately at times during routine management Council is required to remove vegetation. This vegetation can be significant or quite common, however Council recognises it has a responsibility to facilitate a “no net loss” of vegetation policy outcome.

### 2017 Targets

- 25000 native plants established through revegetation to replace native vegetation cleared and/or restore function to degraded landscape
- Increased connectivity between priority remnant vegetation with a focus on Endangered Ecological Communities

Indicator	Source
Area (ha) of riparian native vegetation rehabilitated	Operations maintenance report
Area (ha) of terrestrial native vegetation enhanced/rehabilitated	Operations maintenance report
Number of priority remnants with improved connectivity and buffering	Operations maintenance report
Number of species planted	Operations maintenance report
Number of plants planted and established	Operations maintenance report
Proportion of local provenance plants used in revegetation	Operations maintenance report
Biodiversity Offset Policy developed and adopted	Environment & Sustainability Committee Reports

### Intermediate Outcomes

Revegetation programs are integrated into Council's Roads and Traffic processes

'No net loss' achieved via adoption of Biodiversity Offset Policy for all Council related works

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## **Objective 1.3: Increase area of significant native vegetation conserved to reduce threats to biodiversity resilience**

### **Intent**

Support action that will encourage landholders to conserve native vegetation in the Wingecarribee Shire LGA. This objective recognises that in the most highly cleared landscapes much of the remaining native vegetation is on private land. Ultimately the management of vegetation and biodiversity can only be achieved if all stakeholders become involved and this is one way to engage collaboratively with the largest landholder in the Wingecarribee Shire, the private landholder.

Establishment of conservation corridors, like that of the Great Eastern Ranges project, increases the resilience of many species to future environmental threats such as climate change. It is intended that a Green Web Strategy is developed for Wingecarribee Shire that will guide conservation priorities across both private and public land.

### **2017 Targets**

- Recruit a minimum of either 50 new agreements or 100Ha into Council's vegetation conservation programs
- Green Web Strategy and action plan developed
- Green Web action plan 50% implemented

<b>Indicator</b>	<b>Source</b>
Number and area (ha) of landholder agreements (Land for Wildlife/ conservation incentives/conservation agreements) established conserving native vegetation	Landholder agreement list
Number of plants planted to enhance agreement conservation areas	Landholder agreement list
% of core habitat expanded that occurs within planned conservation corridors	Landholder agreement list
Number of landholder enquiries relating to NRM for their properties	Environment & Sustainability Branch statistics
Number of hits on Council's Flora & Fauna page	Council website statistics

### **Intermediate Outcomes**

Development of bushland corridor systems

Conservation of ecologically significant vegetation

Increase in area of ecologically significant vegetation through buffering and/or infill of core habitat

Green Web mapped to assist in planning decisions and revegetation activities

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## **Objective 1.4: Enhanced capacity of Council and community to protect and restore natural ecosystems**

### **Intent**

Improve and direct Councils management of key threatening processes and the recovery of threatened species, populations and ecological communities within the Shire. Wingecarribee Shire Council is responsible for the management of biodiversity populations including Endangered Ecological Communities within the LGA. Council meets its obligations to develop Plans of Management for all significant natural areas. The scope of these documents needs to encompass EEC ground-truthing and vertebrate pest management requirements and guidelines.

This objective also links the management of these threatened ecological species and ecosystems with objectives and targets identified by the DECCW and HNCMA strategies and catchment blue prints.

### **2017 Targets**

- All reserves in areas identified as being habitat for endangered fauna species are supported by vertebrate pest management plans
- At least one (1) enhanced and comprehensive Plan of Management created to protect significant EECs and threatened species on Council managed land
- All Council managed areas that contain EECs will have appropriate infrastructure and signage

<b>Indicators</b>	<b>Source</b>
% EEC's on Council managed land under active maintenance	Operations maintenance report
Number of enhanced Plans of Management developed	Environment & Sustainability Committee Reports
Number of Vertebrate Pest Management Programs completed	Operations maintenance report
Number of community volunteers associated with EEC works or projects	Operations maintenance report
Number of Indian Myna traps loaned/birds euthanised	Environment & Sustainability Committee Reports
Number of community driven projects implemented	Environment & Sustainability Committee Reports

### **Intermediate Outcomes**

Preventative controls in place for the management of biodiversity

Improved community awareness of location of local EECs and their key threatening processes

Improved awareness within Council outdoor workforce of Threatened Species and EECs as well as Council's obligations for their protection

Incremental ground-truthing of EECs undertaken and maps updated as part of Council's daily operations

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## **River Health and Wetlands**

### **Overview**

Wingecarribee Shire inherited its name from its most prominent and important river. The Wingecarribee River is one of the two dominant river systems in the southern region of the Hawkesbury Nepean Catchment. It is a key landscape feature and is flagged in the HNCMA River Health Strategy.

Most riparian areas transecting urban and agricultural lands have a prolonged history of degradation, impacting on their environmental qualities and aesthetical values. For many years riparian areas have borne the impacts of urban, industrial and agricultural development, resulting in the decline of the health and quality of riparian systems.

### **HNCMA (Hawkesbury Nepean Catchment Management Authority)**

Wingecarribee Council has been working closely with the HNCMA especially with regard to rehabilitation of riparian areas. Over half of the Wingecarribee sub-catchment has agriculture as the major land use, most of which is confined to the upper reaches where water extraction and farm dams are common. Farming activity can affect quality of water from runoff (diffuse water containing excessive nitrates, phosphates and other pollutants) and access of livestock to riparian areas causing damage to vegetation, destabilising creek and riverbanks and adding to pollutions of the water. Council maintains a close relationship with HNCMA, collaborates on strategic planning and funding of river health and wetland projects.

The continuing project sites within the catchment that are aligned with HNCMA River Health Strategy include:

- Wingecarribee River (including Caalong Creek)
- Gibbergunyah Creek (including Chinamans Creek & Iron Mines Creek)
- Whites Creek
- Mittagong Creek
- Paddy's River Wetlands (including Currabunda Wetlands)
- Nattai River
- Upper Nepean headwaters

The above is viewed as the list of our *major* rivers and creeks where Council will carry out projects with respect to this Strategy.

### **Southern Rivers CMA**

Approximately 16% of the Shire falls within the area of the Southern Rivers Catchment. Particular targets associated with water quality and water management within the Southern Rivers Catchment Action Plan (2006 – 2016) have been folded into this Strategy's objectives and targets so as to ensure alignment.

### **SCA (Sydney Catchment Authority)**

The SCA monitor water quality at key points throughout Wingecarribee Shire. The project site of particular interest to SCA is Gibbergunyah Creek (including Chinamans Creek & Iron Mines Creek) as part of upper Nattai River catchment. According to SCA, water quality (2005-2007) measured at Gibbergunyah Creek, which is immediately downstream from a large urban area and a sewage treatment plant, was generally poor for all environmental values.



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**Current Issues:**

- Areas of erosion of river banks due to unstable riparian zones and continuous access by humans and stock;
- 24% of riparian areas have little to no native or woody vegetation connectivity;
- Chemical and biological water quality has shown some improvement but there are regular elevated levels of nutrients in a number of sites;
- Decreased level of wildlife habitat and connectivity within the riparian zones;
- Degraded biodiversity values along riparian areas;
- Wide range of pollutants entering storm water flows and contaminating our urban creeks, however the quantity and quality is unknown;
- Limited awareness within the community of the sensitive conservation values of the ecosystems occurring within the Hawkesbury Nepean catchment areas;
- There are 9 licenses to discharge into our waterways with the greatest load being from Council's 5 sewage treatment plants;
- There are approximately 4500 on site sewage systems present in the Shire. Approximately half of these have been inspected over the last 5 years.

**Key Actions:**

Develop Riparian Management Policy

Establish integrated NRM approach to water course asset class using Mittagong Creek as the pilot project

Continue current level of maintenance on past riparian project sites

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## **Objective 2.1: Improved water quality management for our major rivers and creeks**

### **Intent**

The quality of water in our rivers, creeks and streams is critical to the survival of many birds, mammals, fish and other wildlife. These riparian areas in the Wingecarribee also provide for drinking water, recreation, agriculture and tourism. These human activities place significant pressure on riparian condition and ultimately water quality. Without appropriate management, the riparian condition can be compromised. Providing for the sound management of this essential natural resource will ensure long term health of waterways and wetlands in the Wingecarribee.

### **2017 Targets**

- Management of all council managed riparian lands will be guided by a Riparian Management Policy
- Four (4) of our eight (8) major waterways will have a Riparian Management plan completed
- Vegetation Policy adopted that directs which species can be planted in riparian zones
- WSUD policy is implemented

<b>Indicator</b>	<b>Source</b>
Number of waterways covered by a Riparian Management Plan	Environment & Sustainability Committee reports
Number of SQID devices installed across the Shire	Engineering Services report
Water quality indicators as provided by Sydney Catchment Authority	SCA reports

### **Intermediate Outcomes**

Increased awareness of state of our major waterways

Prioritised works identified for our major waterways and wetlands

Integration of Riparian Management Plans and urban stormwater infrastructure plans

Adoption of a WSUD Policy

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## Objective 2.2: Improvement in the health and function of our riparian areas

### Intent

Most urban creek areas have a prolonged history of degradation, impacting on their environmental qualities and aesthetic values. For many years streams and creeks have endured the impacts of urban and industrial development, resulting in the decline of the health and quality of riparian systems. Urban creeks and streams are the main environmental interface between the broader community and the living environment.

Employing a systematic approach to the management of these major assets will result in measurable results. Community will enjoy cleaner and healthier creeks and result in increased appreciation of local environment.

Approach taken is to conduct condition assessment and create management strategy for each major waterway. Implementation of works will be carried out in order of priority recommended by assessment. Mittagong Creek will be the first waterway to have work commence since its Riparian Management Plan has been completed in early 2012.

### 2017 Targets

- All urban streams and creeks will be maintained to reduce rubbish and excessive growth of water reeds
- Asset condition reports completed for 3 of major waterways
- Action plans created for 3 of major waterways
- Action plan 60% complete for Mittagong Creek
- Action plan commenced for two other major waterways
- Accelerate progress of objective through grant funding opportunities

Indicators	Source
Number of volunteer hours contributed to riparian rehabilitation	Environment & Sustainability Committee reports
Number of projects completed resulting from Riparian Management Plans	Environment & Sustainability Committee reports
Number of Gross Pollutant Traps (GPT) installed and maintained	Asset maintenance reports
Storm Water Management Plans developed	Engineering Services reports
Km of riparian banks under stabilisation treatment	Operations maintenance reports
Number of plants established along riparian areas	12 month review of planting activity
Riparian vegetation condition (%poor/fragmented/good)	SCA reports

### Intermediate Outcomes

Processes established to protect urban stream banks on both private and public land from erosion and weed infestation

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## ***Sustainable Living***

### **Overview**

Sustainability Initiatives will focus on researching, assessing and adoption of innovative processes and technology to provide environmental resilience of Wingecarribee Shire to impending external factors such as 'peak oil', population increases, changing legislation and climate change.

### **Unique Issues:**

- Aging population that is increasing at a faster rate in comparison to other LGAs in NSW. Therefore a larger proportion will be able to provide more time due to being retired and ready to contribute to legacy building for next generations
- Distribution of towns and villages impede efficiency opportunities
- Limited competition within local industries restricts opportunities to negotiate commercial arrangements with sustainable production and supply chain priorities
- Limited recycling services. However recycling business opportunities emerging from e-waste and construction industry waste products.
- Public transport systems can't service needs of a community that is widely distributed

### **Key Actions:**

Support and facilitate the use of designs and products in built infrastructure that are energy and water efficient

Initiatives to reduce amount of waste being produced by our community and measures to increase the levels of recycling

Establish methods & tools to measure, monitor and report on our community's carbon emissions

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## **Objective 3.1: Continuous improvement in waste avoidance and resource recovery**

### **Intent**

Volume of waste generated by our community is a major impact on our natural environment. The habits that have been formed in our society are hard to break and concentrated education and incentive programs to alternative behaviour are required to ensure that residents and businesses are conscious of what they consume and mindful to separate out items that can be recycled. Education focus areas include contamination reduction, waste minimisation and waste avoidance. These combined with consistent regulatory action will encourage better waste management practices.

### **2017 Targets**

- Waste Management Strategy reviewed and implemented
- Reduced incidents of illegal dumping

<b>Indicators</b>	<b>Source</b>
% of collected waste recovered	Resource Recovery Centre quarterly reports
% of collected waste to landfill	Resource Recovery Centre quarterly reports
Amount (tonnes) hard waste recycled	Resource Recovery Centre quarterly reports
Amount (tonnes) green waste recycled	Resource Recovery Centre quarterly reports
Amount (tonnes) general waste recycled	Resource Recovery Centre quarterly reports
Amount (tonnes) general waste to landfill	Resource Recovery Centre quarterly reports
Number of incidents of illegal dumping	Ranger statistics

### **Intermediate Outcomes**

Communication strategies established

Continued education programs that provide information on why and how to reduce waste and household waste responsibilities

Mechanisms to address illegal dumping reviewed and improved

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## **Objective 3.2: Reduced usage of fossil fuels and carbon emissions within Wingecarribee Shire**

### **Intent**

While much of this objective is being addressed by initiatives at a State/National and global level, it is necessary to act locally by identifying the main contributing factors to carbon emissions within our local area and proceeding with action plans that include retrofitting, making use of energy efficient and renewable energy technology and creating new habits that reduce our community's overall fossil fuel usage. Steps that need to be followed include:

1. Collate inventory of Shire and Council GHG emissions
2. Set emission reduction targets
3. Develop local carbon reduction management plan
4. Develop carbon action plans (CAPs) for identified sites/areas
5. Implement carbon action plans
6. Monitor and review

### **2017 Targets**

- Increase in built infrastructure that supports bicycle usage across the shire
- Increase in usage of public transport by Council staff and across shire residents
- Carbon action plans initiated and measured reductions obtained

<b>Indicators</b>	<b>Source</b>
Council's GHG emissions	Planet Footprint data

### **Intermediate Outcomes**

Tools established to measure progress

Clear baseline data of Council's and community's current fossil fuel usage

Clear baseline data of Council's and community's carbon emissions

Carbon Policy adopted

Firm targets set for emission reductions

Carbon action plans developed for Council's top 10 usage sites

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### **Objective 3.3: Majority of community actively chooses sustainable products and services**

#### **Intent**

This objective covers the positive actions required to encourage our community to live within it means in terms of its impact on local and imported resources. Particular focus will be on the fact that our unique climate and location enables specialised food production. Various education programs and support of local community groups and businesses will realise the full potential of a local food bowl.

#### **2017 Targets**

- Culture that selects products and services that are better for our environment.
- Increased level of engagement with the community on sustainability issues
- Minimum of ten (10) businesses per year to be involved with Council's sustainability action plan program

<b>Indicators</b>	<b>Source</b>
Attitude and actions of community demonstrate a preference for sustainable products	Community survey
Number of businesses that have developed and are actively implementing sustainability action plans	Business survey
Number of hits on sustainability page of Council's website	Council website statistics
Number of Council facilitated sustainability workshops/meetings held	Environment & Sustainability Committee reports

#### **Intermediate Outcomes**

Education strategies developed and implemented which promote sustainable living

Website information supporting sustainable living is updated and relevant

Council connects community with State & Federal sustainability initiatives

Incremental reduction of community's usage of fossil fuels and carbon emissions

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## **Community Capacity & Commitment**

### **Overview**

This focus area is about strengthening the capacity and commitment of the broader community to act together to address environmental issues.

The conservation and protection of the environment is only really achievable if the whole community gets involved. Community education in natural resource opportunities and environmental management is the way to enlist such involvement.

Wingecarribee Shire Council manages an exceptionally diverse and representative range of ecological communities, comprising of approximately 4000 hectares of intact to moderately undisturbed ecosystems. Without community volunteer support, the ability to continue to protect, enhance and restore this environment would be significantly compromised.

Our community stakeholders are our crucial partners in achieving environmental outcomes. Individuals and groups within the community need to be provided with the skills, knowledge and technical support to augment the outcomes in the larger environmental program.

### **Unique Issues:**

The Environment Strategy initiatives associated with bush regeneration and protection of the biodiversity assets within the Strategy are highly dependent on volunteer contributions. While environment programs are supported by significant contribution levels from volunteer workers, these volunteers are predominantly retired older people. It is important to target community engagement efforts towards younger generations in order to expand the age range as well as the breadth of the volunteer base.

### **Key Actions:**

Reinforce and recruit further community volunteers in environmental programs, especially younger people

Education strategy and campaign to increase knowledge in our community of our EECs and local threatened species



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## **Objective 4.1: Improved access to information to enable our community to act on local environmental issues**

### **Intent**

For the community to act on environmental change it needs to have access to the information and knowledge and to be introduced to new ideas and techniques. This knowledge will encourage the community to be proactive about improving the natural environment and also encourage and increase in active participation in environmental programs.

### **2017 Targets**

- Enhanced set of resources and environmental education tools regularly utilized by Council staff and the community
- Increase community awareness and understanding of natural resources, biodiversity, and its conservation.
- Increased number of individuals in the community actively involved in environmental activities

<b>Indicator</b>	<b>Source</b>
Number of workshops, field days and events	Environment & Sustainability Committee reports
Number of persons participated in workshops, field days and events	Environment & Sustainability Committee reports
Number of community driven activities supported	Environment & Sustainability Committee reports
Number of hits on environmental pages of Council's website	Council website statistics
Number of environmental fact sheets downloaded	Council website statistics

### **Intermediate Outcomes**

Revision of all environmental resources, tools, fact sheets and website information

Strengthened relationships with our community through shared environmental focus

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## **Objective 4.2: Increased support and skills development for environmentally active members of our community**

### **Intent**

Positive behaviour change occurs gradually through a concerted effort over a long period of time and includes the need for ongoing development of knowledge and skills as information and technology improves. These mechanisms empower and motivate the community to not only understand NRM processes, but also to take positive action that supports improvements to the Wingecarribee's natural environment.

### **2017 Targets**

- Bushcare and Landcare volunteer groups receive on-going encouragement, training and support to improve their capacity to deliver effective outcomes through on ground projects
- Zero harm for Wingecarribee volunteers involved in environmental activities

<b>Indicator</b>	<b>Source</b>
Number of workshops/Field days	Environment & Sustainability Committee reports
Number of persons participating in Bushcare and Landcare	Operations maintenance reports
Number of Bushcare and Landcare training sessions held	Environment & Sustainability Committee reports
Number of educational resources produced for volunteers	Environment & Sustainability Committee reports
Number of volunteer hours	Operations maintenance reports

### **Intermediate Outcomes**

Increased knowledge of the Shire's biodiversity values

Improved understanding of Natural Resource Management principles and methodologies

Improved knowledge of weeds management methodology in our community

Improved OH&S awareness and procedures for our volunteers

Improved awareness of WSC's Code of Conduct within the Bushcare and Landcare network

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## **Objective 4.3: More effective communication of planning and results of environmental activities within our community**

### **Intent**

The environment is an asset of common interest in the community. If we cannot connect with the community, this common bond is significantly reduced. Harnessing this common interest to work together and exchange information will strengthen the ability of Council to work together in a partnership with the community. This ultimately creates a cultural change that will accelerate our positive environmental outcomes.

### **2017 Targets**

- Detailed information on environmental project progress and case studies are published via a variety of media

<b>Indicator</b>	<b>Source</b>
Number of articles published in local printed media regarding environmental stories and program progress	
Frequency of new and revised articles posted on Council website	
Number of environmental stories and program progress released	
Membership numbers of environment related community groups	BushCare, Landcare, CANWin, Bird Watchers and other groups
Number of hits on environmental reporting pages of Council's website	Council website statistics

### **Intermediate Outcomes**

Public progress reports created quarterly for key environmental projects

Environment and Sustainability Committee continues to be run in a productive manner

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## **Objective 4.4: Significant increase in leveraging environmental education/incentive projects available from NGOs, NSW and Australian Governments**

### **Intent**

Many environmental initiatives that are applicable to our community have their beginnings in other organisations and levels of government. Quite often these initiatives need to be localised and focused for our community to maximise the benefits of the program. This includes programs such as Bio Banking, HNCMA activities, Caring for our Country, Land for Wildlife, Clean Up Australia Day, Low Income Energy Efficiency Program, Greening Australia, etc. Often these programs have associated funding which is more readily accessible with the leveraging of existing environmental funding.

Priority will be given to activities that are aligned with targets in the WSC Environment Strategy.

### **2017 Targets**

Value of environment grants attained is 20% of Council's total environmental operating budget.

<b>Indicator</b>	<b>Source</b>
Number of grant applications	Environment & Sustainability Committee reports
% successful grant applications	Environment & Sustainability Committee reports
Amount of money obtained through grants	Environment & Sustainability Committee reports
Number of 3 <sup>rd</sup> party projects utilized	Environment & Sustainability Committee reports
Participation numbers within each 3 <sup>rd</sup> party program	Environment & Sustainability Committee reports

### **Intermediate Outcomes**

Improved return on investment for environmental projects

Community provided access to most current initiatives

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## **Environmental Systems**

### **Overview**

Environmental Systems will focus on the establishment and improvement of policies and procedures that govern the environmental impact of Council's activities and decisions. It covers the refinement of our EMS (Environmental Management System) to ensure that all projects at Council have a reduced environmental risk and considers the protection and/or enhancement of our natural resources.

It is also of key importance that activities that have environmental outcomes are based within institutional frameworks, plans and strategies.

### **Unique Issues:**

- Changing legislation and requirements, e.g. Clean Energy Futures Legislation, new EEC listings.
- Varying levels of environmental awareness and knowledge of environmental obligations within Council and the community
- State of Council policies have fallen behind current legislation
- Variety and scope of Council activities have increased potential risk for environmental impact, e.g. water and sewer responsibilities
- Majority of the Shire is subject to the SCA's NorBE (Neutral or Beneficial Effects) development constraints to protect drinking water quality

### **Key Actions:**

Embed environmental assessment procedures into Council's Roads and Traffic operations

Develop methodology for NRM Asset Management commencing with a water course asset class

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**Objective 5.1: Monitoring, evaluation and reporting system in place to support best practice Natural Resource Management and environmental program performance****Intent**

Monitoring is the key to knowing you are winning. Implementing a monitoring, review and reporting process as an integral component of all NRM activities should provide this level of information. As the environment is a living thing, evolving over time; there is constant change in condition, extent and diversity. Data collated from the MER (monitoring, evaluation and reporting) program will help refine current activities and guide future works as well as provide Council the information required for future investment and promotion of the environmental levy outcomes.

It is intended to utilize the National NRM MERI Framework guidelines when developing monitoring, review and reporting plans. Council will include state and federal government agencies with respect to data collection and reporting.

**2017 Targets**

- Council and environmental based community groups carry out MER process routinely apply as part of general Natural Resource Management of Council managed lands.
- Framework for monitoring key environmental indicators developed and in place

<b>Indicator</b>	<b>Source</b>
Number monitoring programs developed	Environment and Sustainability Committee reports
Number of resource conditions monitored	Environment and Sustainability Committee reports

**Intermediate Outcomes**

Data gathered through the MER process will provide decision makers the information required to promote and consistently develop Councils environmental performance

Identification of indicators and monitoring points

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## **Objective 5.2: Foundations for NRM Asset Management are in place**

### **Intent**

An overarching approach needs to be developed and agreed with respect to long term management of Council-managed natural assets. Initial steps include: determine to what extent traditional asset management systems can be applied; clear definition of the extent, purpose and "life" of each of the natural asset classes; determination of the "value" of each asset; calculation of sustainability index (SI) for each asset; refinement of strategic objectives for natural asset management to drive future investment and priorities.

### **2017 Targets**

- Natural asset classification is defined and scoped
- Agreement on how to define the "satisfactory condition" of each asset class

<b>Indicators</b>	<b>Source</b>
Number of natural resource Asset Management Plans developed	Asset management reports
Sustainability Index calculated for natural assets	Asset management reports

### **Intermediate Outcomes**

Structured approach to management of Council's natural assets.

Formal natural asset management recognised and accepted as integral to Council's overall asset management approach

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## **Objective 5.3: Risk to environment is reduced through regulation, enforcement and development of Council systems and processes**

### **Intent**

All local Councils have a role to play in the regulation and enforcement of legislation associated with reducing impact of human activities to the environment. Most prominently used is the NSW EP&A Act (1979) for minimising impact of development activities; followed by the NSW PoEO Act (1997) that manages the cumulative impact on the environment of existing and future human activities. Other legislation is applied as necessary for particular environmental issues. The full list of legislation that Council utilises to manage risk to the environment can be found in the section *Related Legislation* on page 12 of this document.

For Council to remain competitive it is also required to have an actively maintained EMS (Environmental Management System) in place which supports the reduction of risk to the environment that may arise from council activities such as roads and bridges construction. A framework of policies and procedures provides the base for the EMS and governs how council operations and decisions are to be carried out ensuring a low risk approach.

It is extremely important that the processes and tools in order to apply relevant legislation and policy are effective and up to date. This includes education of each Council staff member with respect to their duties and potential impact to the environment.

### **2017 Targets**

- EMS procedures are in place, audited and undergo review process
- All Council employees received EMS training
- Environmental incidents are recorded, investigated and acted on to avoid repeat
- Council has obtained ISO EMS accreditation for roads and bridges construction
- Enforcement Policy reviewed and updated

<b>Indicator</b>	<b>Source</b>
Number of EMS procedures developed	Environment and Sustainability Committee reports
Number of environmental incidents and near misses	Incident reports
% staff trained in EMS	Training attendance records
Number of notifications issued by Council under PoEO, LG, EP&A, Threatened Species, EPBC and NPW Acts	Legal Committee Report

### **Intermediate Outcomes**

Mitigation and adaptation action plans developed in response to climate change risk assessment

EMS developed as an element of Council's Integrated Management System

Regular internal EMS audits



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## Glossary

Aboriginal Cultural Heritage	Physical evidence of Aboriginal occupation including artefacts, scar trees, carvings, burial and ceremonial places; and non-physical aspects such as environmental knowledge, language, stories, songs, art, spiritual associations, beliefs and practices
Adaptive management	Process of implementing land management activities in incremental steps and evaluating whether desired outcomes are being achieved at each step. If conditions deviate substantially from predictions, management activities are adjusted to achieve desired outcomes
Aesthetic value	The importance of a beautiful landscape to human well-being; visual amenity
Aquifer	Underground layer of porous sediments and rocks that can store and yield groundwater. Bores and wells are used to obtain water from aquifers
Best practice	The practice of seeking out, emulating, and measuring performance against the best standard available
Biodiversity	The variety of all life forms: the different plants, animals and microorganisms, the genes they contain, and the ecosystem they form. Often considered at three levels: genetic diversity; species diversity; and ecosystem diversity. It emphasises the interrelatedness of the biological world, and encompasses the terrestrial, marine and aquatic environments.
BIOLINK	A collaborative project between State Regional and non Government NRM bodies, run by the HNCMA , that aims to protect and improve the biodiversity assets in the Southern Highlands Biodiversity corridor
Buffers	The (usually) vegetated area of land maintained to mitigate impacts ensuing between two conflicting land uses, or land use and adjacent watercourse
Bushcare	A community-based program where groups of people join together to conserve and rehabilitate native bushland by voluntarily undertaking environmental on-ground works. It is an initiative of the NHT.
Bush Regeneration	Means the rehabilitation of bushland from a weed-infested or otherwise degraded plant community to a healthy community composed of native species. Natural regeneration relies on germination and resprouting of native plants, with a focus on weed removal, management of disturbances and the maintenance of natural processes.
Catchment	The area of land drained by a river and its tributaries
Catchment Health	A broad concept relating to the condition and sustainability of the environment as a productive system
Connectivity	The linkages in a landscape that allows connectedness of ecological processes and facilitates adaptation for wildlife species in the face of climate change
Conservation	One of the approaches to ecosystem management which incorporates protection, maintenance and monitoring. It aims to maintain the continuity of a system, with or without change, and refers to the process and actions of looking after a place to retain its natural significance and functioning.
Corridor (habitat/vegetation)	Areas of native vegetation linking larger areas of remaining native vegetation that enables migration, colonization and interbreeding of plants and animals

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EEC	Endangered Ecological Community. Ecological communities listed under the NSW Threatened Species Conservation Act (1995) and the Federal Environmental Protection and Biodiversity Act (1999)
EPBC Act	Environment Protection & Biodiversity Conservation Act 1999 is an Act of the parliament of Australia that provides a framework for protection of the Australian environment.
Ecological community	Means an assemblage of species occupying a particular area
Ecologically Sustainable Development	Using, conserving, and enhancing the community's resources so that ecological processes are maintained and the total quality of life, now and in the future, can be increased. It encompasses a number of key principles including: <ul style="list-style-type: none"> <li>- The precautionary principle.</li> <li>- Inter-generational equity.</li> <li>- Enhance individual and community well being.</li> <li>- Conservation of biological diversity and ecological integrity.</li> </ul>
Ecosystem	Communities of organisms and their physical, non-living environment interacting as a functional unit, characterised by ecological processes such as the flow of energy and nutrient through food webs.
Ecosystem Diversity	The variety of biological influences interacting with the natural and physical environment.
Ecosystem Services	Organisms and environmental processes interacting to create a healthy environment for human beings including production of oxygen, soil formation and maintenance of water quality
Endangered	Under the Commonwealth Endangered Species Protection Act 1992 and Environment Protection and Biodiversity Conservation Act 1999, a species is endangered if: it is likely to become extinct unless the circumstances and factors threatening its abundance, survival or evolutionary development cease to operate; or its numbers have been reduced to such a critical level, or its habitats have been so drastically reduced, that it is in immediate danger of extinction, or it may already be extinct, but is not presumed extinct.
Endemic species	Are those species that are native to a certain region with restricted distributions and within a restricted range. Outside that restricted range (such as an ecosystem island, or within country boundaries) an endemic species is found nowhere else on earth.
Environment	Is the combination of external conditions (both natural and artificial) that influence the life of individual organisms.
Environmental Indicators	Indicators which describe the quality and quantity of natural resources ("state" indicators), the pressures put on the environment by human activity ("pressure" indicators) and the societal response to the pressures ("response" indicators)
Environmental Weed	Environmental weeds are weeds that impact on the natural environment. They may be spread by birds, water, wind and humans via dumping of garden clippings.
Environmentally Significant Council Managed Land	Land managed by Council, which may include bushlands reserves, road reserves, parks, or riparian corridors, that makes a significant contribution to the natural environment of the shire
Fauna	Means animals (including both vertebrates and invertebrates).
Fragmentation	Isolation of areas of habitat or ecosystems through loss of connection with larger areas, or by the development of barriers between connected habitats or ecosystems.
Groundwater Water	Water occurring below the ground surface
Groundwater dependent Ecosystems	Plant and animal communities that depend on groundwater and that are adapted to the natural variation in groundwater levels and quality including severe drought and flood conditions. Examples include wetlands and swamps.

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Habitat	An area or place where an animal or a plant normally lives and reproduces. In this document it encompasses terrestrial and aquatic (freshwater and marine) habitats. It may be occupied permanently, periodically or occasionally
Habitat Loss	Is the broad scale removal of vegetation (as apposed to Forestry Logging)
Habitat Value	Refers to the extent to which an area is capable of supporting large numbers of a range of species. Habitat value is related to the extent of vegetation diversity (both species and structure), and the availability of the resources such as nesting places, food and protection from predators, as required by each species present
HNCMA	Hawkesbury Nepean Catchment Management Authority. An independent statutory body established under the Authorities Act 2003 to manage natural resources at a catchment level in partnership with local communities. Natural resources include land, rivers, estuaries and coastal systems
Indigenous species	A species that occurs naturally in the local area but whose natural range is not restricted to the local area
Introduced species	A species that is not locally indigenous
Key stakeholders	Individuals, groups, government and non-government agencies who have an interest or stake in a particular issue, its management, and any potential outcomes
Key threatening processes	A process that threatens, or may threaten, the survival, abundance or evolutionary development of a native species or ecological community
Landcare	A community-based program where groups of people join together to further sustainable land management by voluntarily undertaking environmental on-ground works.
Land Use	Refers to the spatial expression of the aggregation of purposes for which land is occupied or employed, and the activities associated with those purposes
Local Control Authority	The local control authority (LCA) for land within a local government area is the council of the local government area or, if noxious weed control functions for that area have been conferred on a county council under any other Act, the county council having those functions. (Noxious Weeds Act, section 35).
MER	Monitor, evaluate and report
MERI	Monitoring, evaluation, reporting and improvement framework is the Australian Government approach to NRM that is iterative and integrative and aims to result in learning and adaptive management
Macrophyte	Large water plants, usually described as emergent, submergent, or floating
Management Plans	Specifies a program of action for managing a particular area of land. Management Plans may be: <ul style="list-style-type: none"> <li>○ Generic documents that apply to a particular class of sites within a region, catchment or local government area</li> <li>○ Site-specific documents that apply to an individual property or reserve</li> <li>○ Statutory documents such as a 'Plan of management' for community land under Part 2 of Chapter 6 of the Local Government Act 1993, or Council Management Plan under Part 2 of Chapter 13 of the Local Government Act 1993</li> </ul>
Management Target	The level of action needed to achieve a target within a specified time, being action that is specific, measurable, achievable and relevant
Monitoring	A systematic process involving planned and repeated data collection, analysis interpretation, reporting and acting on the data
NPW Act	National Parks & Wildlife Act

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Natural Resource Management	The management of natural resources (e.g. land, water and biodiversity) in an integrated fashion recognising the values of both conservation and productive use of natural resources and striving to achieve sustainability in all resource use
No Net Loss	No overall loss in the total extent, quality and ecological functioning of native vegetation. The carrying out of operation should not result in any net reduction in biodiversity. Can be achieved by protecting existing habitat, reconstructing former habitat, providing compensatory and appropriate design
Noxious Weed	A weed declared under the NSW Noxious Weeds Act 1993 (as amended 2006). Owners and occupiers of land are legally required to control noxious weeds
Offsetting	An action taken away from the development site that may seek to compensate for the loss of vegetation caused by that development site. It may take the form on monetary compensation, revegetation/regeneration, etc.
PoEO Act	Protection of the Environment Operations Act.
Plant Community	A group of different species of plants living together in a particular area
Provenance	Plant stock that has been propagated from a remnant indigenous specimen, which exists in similar site conditions as to that of the desired planting location
Pest	A general term describing an animal or plant that is directly harmful to the health of people, or that has a negative impact on a valuable resource and requires some form of action to reduce that impact
Recovery plan	A plan prepared and approved under Part 4 of the Threatened Species Conservation Act 1995 or Part 7A of the Fisheries Management Act 1994 providing for the recovery of threatened species, populations, or ecological communities
Rehabilitation	A general concept referring to restoration and repair of a degraded ecosystem to a former condition
Remnant (vegetation)	Small fragmented portion of the former dominant vegetation which once covered the area before being cleared for human use
Resilience	Ability of an ecosystem to withstand change from various environmental and human-induced impacts
Riparian	Any land which adjoins, directly influences, or is influenced by a body of water. This includes land immediately adjacent to small creeks and rivers, river banks, intermittent streams or gullies, and areas surrounding lakes and wetlands on river floodplains which interact with the river during floods.
Riparian corridors	The banks (including parts of the floodplain) and beds of lakes, rivers, streams and creeks, whether perennial or intermittent, natural or altered.
SQID	Stormwater Quality Improvement Device. SQID's are used to help protect the creeks and rivers that stormwater drains into. They trap or collect rubbish and pollution that may end up in stormwater drains.
Species	A distinct, recognizable kind of plant or animal
State of Environment (SoE) reporting	A process that provides a scientific assessment of environmental conditions, focusing on the impacts of human activities, their significance for the environment, and societal responses to the identified trends.
Strategies	The mechanisms for carrying goals and objectives into effect. They are action statements explaining how something is to be achieved. Strategies lead to policies and programs
Subcatchment	The area that drains a tributary within the catchment of a major river system
Target Weeds	Specific weeds targeted for eradication, having been identified as posing a threat to the natural biodiversity of a particular area.

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Terrestrial	Pertaining to the land (as opposed to water)
Threatened Species Conservation Act 1995	(TSC Act) is State government Act which provides a framework for protection of vulnerable and endangered flora and fauna within NSW.
Threatened Species	Is a species considered to be at risk of becoming extinct, or of becoming endangered. Such species are listed in the threatened Species Conservation Act 1995
Understorey	The layer of vegetation below the canopy
Urban stream restoration	Process (or end result of) reinstatement of the structure and dynamics of a pre-existing waterway and its associated aquatic and terrestrial habitats. It is a form of rehabilitation
Water quality	General term describing the suitability of water for a given use (eg. human drinking water, stock water, etc.)
Weed	A plant that is undesirable because it is out of place; including native species outside their natural range
Wetland	Means land periodically or permanently inundated with water, comprising emergent aquatic vegetation dominated by characteristic wetland species. Wetlands include areas commonly described as swamps, mangroves, ponds, lagoons, and the like. The majority of plant species present normally comprise sedges and rushes.

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## References

Commonwealth of Australia 2011, *Australian Government Natural Resource Management Monitoring, Evaluation, Reporting and Improvement framework*, <http://nrmonline.nrm.gov.au/catalog/mql:2160>

State of NSW and Department of Environment, Climate Change and Water NSW 2010, *New South Wales Natural Resources Monitoring, Evaluation and Reporting Strategy 2010–2015*, <http://www.environment.nsw.gov.au/resources/soc/10977nrmmerstrat1015.pdf>