



The Rural City of  
**MURRAY  
BRIDGE**

*Bridge to Opportunity*



*The Rural City of Murray Bridge*  
**Biodiversity Strategy**

**2015-2020**



## FORWARD

Welcome to the Rural City of Murray Bridge which is on traditional Ngarrindjeri land. Murray Bridge is the regional centre of the Murraylands with a diverse range of vegetation.

The progressive degradation of native vegetation and increase in exotic plants and animals continue to have a devastating impact on our natural biodiversity within the Rural City of Murray Bridge.

The aim of this Biodiversity Strategy is to enhance a sustainable natural and built environment that meets current and future community needs and to maintain and enhance the species of genetic diversity, vegetation associations and habitat types currently occurring within existing native vegetation.

One of the roles of the Rural City of Murray Bridge is that of manager of the land under its ownership or control. As a local government body, it has a responsibility, in partnership with the local and wider community, to prepare and implement strategies to achieve a sustainable future for this land.

Native vegetation varies considerably throughout the Council with several vegetation associations from the Eastern Mt Lofty Ranges, River Murray and Mallee areas. The range of original vegetation types is well represented within the road reserve system of the Council.

Council recognises there is an opportunity to play a role in strategically managing land under its control to actively protect and enhance biodiversity.

The Rural City of Murray Bridge Environmental Management Plan identified the development of this Biodiversity Strategy as a priority action.

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# 1 Introduction

## 1.1 What is Biodiversity?

Biological diversity, or biodiversity, is used to describe the totality of genes, species, and ecosystems of a region, and provides a good indicator of ecosystem health. Diverse systems and regions are more resilient to change. The more interactions one species, element or process has with other species, elements or processes in the same ecosystem (e.g. the more diversity), the more resilient it is to disturbance. Disturbances can be both natural and human-induced, including pollution, climate change, flood, fire and clearing of native vegetation. Resilience means that a system is more able to continue functioning in a stable state, and provide ongoing 'ecosystem services'.

Ecosystem services are the result of the complex interactions and processes of biodiversity (genes, species and ecosystems) working synergistically. These services are:

- Provisioning; such as the production of food and water;
- Regulating; such as the control of climate and disease;
- Supporting; such as nutrient cycles and crop pollination; and
- Cultural; such as spiritual and recreational benefits.

Ecosystem services provide us with food, water, shelter, clothing, clean air, clean water, climate regulation, organic waste decomposition, soil stabilisation, plant pollination, and inspiration for our societies and cultures. Tourism and recreation, nature conservation, pastoralism, agriculture, horticulture, forestry, aquaculture and fishing all benefit from healthy ecosystems. Our primary production systems require biodiversity for pest control, soil production and stabilisation, pollination, and water purification. The significance and abundance of invertebrates in the environment is often overlooked, yet their roles in maintaining soil fertility, nutrient recycling and plant pollination are critical in a balanced ecosystem. Much of the State's economy and identity is founded on biological resources and biodiversity.

For all these reasons, it is vital that we manage these valuable resources to maintain their value and all they offer and provide, to ensure that we can all continue to benefit from them in the generations to come.

## 1.2 Why is Biodiversity Important?

The values of biodiversity are economic as well as social and cultural.

It is global biodiversity that provides the critical processes that maintain our air, water and soil. As well as conserving global biodiversity, natural areas provide opportunities for recreation, tourism, scientific research and education. It is the nature of a place that defines that place, and each ecosystem is unique to the place where it occurs.



Biodiversity is not, as is sometimes portrayed, a crude count of species present at a location. An essential component of the biodiversity of a location is the interaction of the species to form a functioning and persistent ecological system.

When a naturally occurring species is lost from an area, this is referred to as local extinction. Each local extinction is a step towards global extinction.

### 1.3 Why Develop a Strategy?

Australia is one of 17 'mega diverse' countries, which occupy less than 10% of Earth's surface, yet support over 70% of the planet's biodiversity. Biodiversity is what keeps ecosystem services operative and providing the functions and resources that we ourselves, and the plants and animals around us, rely on to survive. Yet, as they are provided cost-free by natural systems and have existed for as long as we can remember, these services are often taken for granted. Many of us are unaware of the complexity of the relationships between different processes and organisms within these systems, and the long-term effects our actions have on their relationships and functions.

Since European settlement, changes in land use and practices have resulted in habitat modification, fragmentation and degradation. Introduction of invasive species, clearance of native vegetation, development, changes to environmental water flows via damming, water resource use, watercourse redirection and altered fire regimes all place our ecosystems and the benefits they provide under threat. Native biodiversity within South Australia is in decline, with the State having one of the highest national extinction rates. The number of threatened species and ecological communities is large and growing with relatively few groups and organisations managing them for recovery.

Although much has been undertaken to reduce further ecosystem degradation, biodiversity loss will continue unless we act to address the decline now. If the necessary actions are undertaken by government, landholders, community and industry leaders, the decline in South Australia's biodiversity can be reversed. Timely and strategic conservation and management of biodiversity will help to maintain ecosystem services, which will in turn deliver immediate and long-term benefits to South Australia and all its inhabitants, including the native wildlife and vegetation around us.

The Rural City of Murray Bridge is responsible for managing remnant vegetation in its reserves and road reserves. By developing this Strategy, Council demonstrates its commitment to biodiversity conservation, the conservation community and the need to collaboratively develop a set of meaningful actions to reduce and strive to reverse biodiversity degradation within the district. The Strategy guides the strategic direction for managing native vegetation and habitat on Council land within the Rural City of Murray Bridge and;

- Identifies key relevant legislation and policy for flora, fauna and habitats and how it applies;
- Defines guiding principles for native vegetation conservation, enhancement and management;



- Reviews priorities and implications for native vegetation and biodiversity management within a local, national and global context;
- Aids in decision making to prioritise the location and level of conservation, restoration and management of native vegetation including the preparation of Vegetation Management Plans;
- Applies a monitoring and evaluation processes to measure success of management activities;
- Recognises biodiversity management as a core business activity on Council land;
- Identifies the paramount importance of biodiversity toward a sustainable future for the Rural City of Murray Bridge; and
- Ensures adaptive management is embedded within the Strategy.



## 2 Legislative and Policy

The preparation of the Biodiversity Strategy has involved referral to a number of external and internal plans and strategies. Where appropriate, aspects of these documents have been incorporated to ensure consistency. In particular this document has been guided by the objectives of the 30 Year Plan for Greater Adelaide, the Murray Mallee Regional Plan, Council's Strategic Management Plan, South Australian Murray-Darling Basin Natural Resources Management Board Regional NRM Plan and the Rural City of Murray Bridge Environmental Management Plan.

Table 1 illustrates the linkages between these plans and the Rural City of Murray Bridge's Strategic Plan. Other relevant State Plans, Federal Plans and Strategies include:

### Federal Government Documents

- Environment Protection and Biodiversity Conservation Act, 1999

### State Government Law

- Native Vegetation Act, 1991 Native Vegetation Regulations, 2003
- Natural Resource Management Act, 2004
- Fire and Emergency Services Act, 2005
- Local Government Act, 1999
- Development Act, 1999
- National Parks and Wildlife Act, 1972
- Crown Land Management Act, 2009
- Environment Protection Act, 1993

### State Government Plans

- SA MDB NRMB Regional NRM Plan, 2009-2019
- The 30-Year Plan for Greater Adelaide
- Murray Mallee Regional Plan

### Local Government Documents

- Rural City of Murray Bridge Environmental Management Plan, 2013-2018
- Rural City of Murray Bridge Roadside Vegetation Management Plan, 2014-2019
- Rural City of Murray Bridge Bushfire Management Plan
- Rural City of Murray Bridge Strategic Plan, 2011-2015

**Table 1. Linkages between key strategic documents and the Biodiversity Strategy.**







### 3 Biodiversity Strategy Structure

It is acknowledged that the natural environmental issues are complex and interconnected.

This interconnection is recognised in the implementation of the actions contained within this Biodiversity Strategy, and, where possible, actions will address multiple environmental outcomes. However, in order to focus our actions and reduce complexity of the document, the plan focuses around four discrete issues:

1. Biodiversity in the Rural City of Murray Bridge;
2. The Strategy – Vision and Principles;
3. The Strategy – Objectives, Strategies and Actions; and
4. Monitoring and Evaluation.

### 4 Biodiversity in the Rural City of Murray Bridge

Our natural environment has been degraded over many decades due to the clearance of land, pollution and inappropriate development. The results have been the loss of species and loss of natural habitats for plants and animals and the degradation of agricultural land and our natural water resources.

Biodiversity is the term used to describe the interaction between all living things. This includes plants, animals and micro-organisms and the ecosystems of which they form a part. A healthy, biologically diverse ecosystem is dependent on the variety of animals, plants and soil biota that exist within the ecosystem. Biological diversity is the genetic, species and ecosystem diversity that exist within an ecosystem.

Biodiversity of our natural ecosystems provides the resources we require to live and therefore we need to proactively protect and rehabilitate areas of biodiversity value thereby improving the ecosystems on which all life depends. Our community needs to value the environment, minimise environmental impacts, use resources wisely and protect biodiversity. We as a Council should educate the community to value our environment and protect it from the effects of human activities.

Soil and soil organisms such as bacteria, insects, worms and fungi make up a large portion of the earth's terrestrial biodiversity. These soil organisms break down wastes from dead organisms and play a crucial role in the biodiversity life cycle. All species within the biodiversity life cycle contribute holistically; the disturbance or removal of just one species can have detrimental results not only to one or more other species but to an entire ecosystem.



Over 90% of original vegetation has been cleared within the Rural City of Murray Bridge for agricultural purposes. Small pockets of native vegetation and roadside reserves are the only remaining areas of remnant native vegetation which has become fragmented and isolated. These remnants are valued for their biological diversity serving as important wildlife corridors, a seed source for revegetation and areas of species habitat. The progressive degradation of native vegetation and increase in exotic plants and animals continues to have a devastating impact on our natural biodiversity within the Rural City of Murray Bridge.

The most significant areas of remnant vegetation within the Rural City of Murray Bridge include Monarto Conservation Park, Ferries McDonald Conservation Park, Monarto Zoo, Murray Park, Morphett Reserve, Dorset Reserve, Ettrick Conservation Park, Rocky Gully, Swanport, and Murrundi Reserve Wetlands and Callington Hill Grassland; as well as our many roadside reserves. Flora of national conservation significance include: *Acacia rhotinocarpa*, *Acacia menzeli*, *Olearia pannosa*, *Prostanthera eurybioides*, *Thelymitra epipactoides* and *Dodonaea subglandulifera*.

Council maintains a system of Roadside Vegetation Markers identifying areas with significant and endangered roadside vegetation.

Council, in partnership with various volunteer groups, manages a number of significant biodiversity sites. These include Council reserves, wetlands and roadside vegetation sites including three Bush for Life sites: Reedy Creek Road Reserve, Murray Park and Morphett Reserve.

Section 5 refers to the Council strategies that will be implemented to protect our existing native vegetation and enhance biodiversity within our region.



## 5 THE STRATEGY

The Strategy guides the management of native vegetation, ecosystem services and habitat within the District. The high level vision and guiding principles developed for the Strategy are region wide, including State Government land, non-government owned land and private land. However, the development of the strategies and actions will focus on Council's role and the land under its care and control.

### 5.1 Guiding Principles

Guiding principles guide an organisation throughout its decision making in all circumstances, irrespective of changes in its goals, staff or structure. The guiding principles developed for this Strategy are:

1. No loss of remnant habitat;
2. Application of the precautionary principle;
3. Priority to sustain and manage threatened species, ecological communities and remnant vegetation, followed by enhancement and restoration;
4. Outcomes delivered through collaborative partnerships;
5. Maintain habitat islands and corridors to ensure habitat connectivity;
6. Adaptive management; and
7. Continuous improvement.



## 5.2 Objectives, Strategies and Actions

The overall objectives of the Strategy seek to complement those of the Regional Recovery Plan for Threatened Species and Ecological Communities of Adelaide and Mount Lofty Ranges and include:

- Increase recovery resources, capacity and coordination;
- Improve planning strategies to reflect regional priorities;
- Increase the current level of priority biodiversity conservation activities;
- Contribute to developing the information base and systems necessary to enhance recovery of threatened species and ecological communities;
- Continue developing and refining status assessment and prioritisation systems; and
- Complement and inform other relevant regional biodiversity planning processes.

The specific objectives, strategies and actions for each of the themes and a description reflecting what they cover are provided in Table 2.

**Table 2 - Themes arranged to reflect council function key area**

	<b>Description</b>	<b>Themes</b>
Biodiversity Planning	Development and land-use planning & policy	1. Land-use Planning 2. Connectivity and Linkages
Biodiversity Management	Delivery of activities by Council staff & volunteers that directly affect biodiversity	3. Bushfire Management 4. Roadsides and Road Reserves 5. Habitat Quality
Capacity Building and Involvement	Volunteer support, community mindfulness and encouraging development of skills and sustainable land management practices.	6. Sustainable Land Management Practices 7. Community Capacity Building
Strategic Collaboration	Relationships with and support from external bodies	8. Partnerships 9. Resources and Funding

These themes are explored in further detail in the sections below. All themes and subsequent actions require balancing legislative requirements, biodiversity outcomes, community expectations and available resources.



### 5.3 Land Use Planning

The Rural City of Murray Bridge covers an area of approximately 1,832 sq/km (including a portion of the River Murray) and comprises a wide variety of landscapes and land use. A significant portion of the Council area is utilised for agricultural and horticultural uses with areas of land in and around Monarto being identified for their unique biodiversity value. Proposals to develop, including changing the use of the land require development approval under the Development Act, 1993. To achieve this they are assessed against the policies and provisions of Councils Development Plan.

Council's Development Plan currently contains 7 objectives and 14 principles within the General Section which specifically relate to Biodiversity and Native Vegetation. These provisions encourage retention and protection of Native Vegetation and local biodiversity as well as what should be considered if native vegetation is proposed to be removed. Satisfying these provisions is usually undertaken on a case by case basis.

Clearance of native vegetation is assessed under the Native Vegetation Act, 1991 by the Native Vegetation Council (NVC). Native vegetation generally cannot be cleared without the permission of the NVC.

Council is currently undertaking a number of studies which have the potential to lead to changes in the current Development Plan and in doing so impact upon biodiversity. In January 2013 Council endorsed the 'Rural Communities Study', which examined a number of rural communities within the Council area in particular focussing on opportunities and constraints and implications for the Development Plan. It is expected that this study will assist in the preparation of the Rural Townships Development Plan Amendment (DPA) which has been identified as a medium priority DPA within Council's review of its current Development Plan.

Additionally Council is undertaking studies into the Monarto area with the intent of producing a Monarto Master Plan. This document will seek to provide an implementable planning framework for employment growth at Monarto South and which also addresses environmental and community considerations. This document is also intended to assist in the preparation of a Development Plan Amendment.



**Table 3 - Objectives, strategies and actions for Land Use Planning**

<b>Objectives:</b>		
Identify policy options to better address issues between native vegetation and surrounding incompatible activities.		
<b>Strategies:</b>	<b>Actions:</b>	<b>Priority</b>
Provide information on appropriate management of native vegetation on private land and Council managed land.  Encourage the greater awareness of the roles and responsibilities of the Environmental Business Unit amongst Council Planning.	Seek agreement to access DEWNR data sets and incorporate in the Council GIS system to map existing areas of significant native vegetation and habitats and make available to the Planning Dept.	Medium
	Identify and map areas which form linkages to connect and expand existing habitat.	High
	Establish stronger ties between Planning and the Environmental Business Unit through regular meetings.	High



## 5.4 Connectivity and Linkages

Existing native vegetation on State Government, non-government, private land and Council land constitute a mosaic of habitat fragments and biodiversity corridors throughout the district. However, while these are vital to the survival of native flora and fauna, this fragmentation affects species ability to move freely and disperse across the landscape, utilise seasonal food resources, and take refuge from disturbance events (such as bushfire and flood). For many species, vegetation reduction and fragmentation means that there is insufficient habitat and/or fragments are too small and isolated to support viable populations. Fragmentation is one of the key causes of biodiversity decline in the region.

The best way to gain maximum habitat benefit from fragments is to maintain and improve their condition through active management and then connect them. Connections and linkages (or corridors) can be any stretch or parcel of undeveloped land, and are one of the most effective tools for conserving biodiversity and preparing landscapes for climate change. The National Wildlife Corridors Plan and the State Government Naturelinks program identify the development of broad habitat corridors as their main objective.

The implementation of these broad directions starts at the local level and the identification of linkages or corridors of differing sizes. Council is responsible for a number of reserves, roadsides, unmade road reserves and sections of watercourses that can be utilised as corridors. Reinforcing or creating these linkages will require cooperation and partnerships between private land owners, communities, agencies and Council. Council can fulfil a coordination role to develop, support and/or facilitate partnerships within the corridor areas. Council can also provide direction in relation to the land that is available to develop these corridors especially with the value of roadside vegetation.

Linkages and connectivity also extend beyond the Council boundaries to connect to neighbouring Council areas including District Council of Mount Barker, Alexandrina Council, Mid-Murray Council and Coorong Council.

Identifying and mapping habitat and linkages to connect and expand habitat, incorporating remnant and restored vegetation areas, wetlands, rivers, creek lines, railway lines, roadside marker sites, unmade road reserves, infrastructure easements, Heritage Agreements with the Native Vegetation Council and private landowner agreements with South Australian Murray-Darling Basin Natural Resources Management Board will enable Council to prioritise resourcing and conservation activities in areas of highest value.

In adapting to changing climatic conditions there is a need to recognise that some species may no longer find suitable habitat in their current location, therefore there is a need to recognise the importance of corridors and linkages between existing stands of remnant vegetation.



**Table 4 - Objectives, strategies and actions for Connectivity and Linkages**

<b>Objectives:</b>		
Plan for connectivity linkages between habitats to increase range and enable adaptability of native flora and fauna		
<b>Strategies:</b>	<b>Actions:</b>	<b>Priority</b>
Manage habitat fragmentation by identifying a habitat connectivity framework to allow improved species movement and adaptation	Identify and map areas which may expand and connect habitat	High
Prioritise habitat linkages appropriate for active management via partnerships and external funding	Develop a Woody Weed Control program within areas of Conservation Value to reduce fuel load and improve habitat quality	High





## 5.5 Bushfire Management

Fire is a natural occurrence in South Australia. It plays an important role in ecosystems, which have evolved with particular plant species corresponding with local fire regimes. The woodlands, forests, grasslands and plant species of the Murray Mallee are prone and often reliant on fire to not only help in propagation of certain species but also to survive long term. Communities are still learning how to most effectively manage fire regimes to minimise uncontrolled, high risk, wildfire events while maximising biodiversity outcomes.

DEWNR's fire research program is exploring beneficial fire regimes and impacts of fire in the landscape, and how to manage fire-prone systems to maximise public safety, and ecosystem health and regeneration. Prescribed burns reduce fuel loads and can also benefit biodiversity by ensuring that native species that need periodic fires to exist and propagate in the environment are provided with a continued viable and productive habitat. High intensity fires resulting from an accumulation of fuel load can actually destroy native vegetation beyond its capacity to regenerate and also poses a high risk to human safety, wildlife and destruction of property.

Council recognises the need to have a transparent, practical, strategic and proactive approach to bushfire management that provides for biodiversity outcomes. Control of species such as Olive, Aleppo Pine and Salignus Wattle in areas of high conservation value not only reduces fuel load, but reduces competition for native vegetation, thereby improving habitat quality. By accessing local knowledge and expertise from the community, Council staff, and DEWNR, resources can be allocated to a program that delivers both fuel load reduction and biodiversity outcomes.

Education regarding fire risk is also critical. Although vegetation can be a fire risk, in some circumstances it may be less significant than storing flammable materials in or near a house or shed. All landowners, including Council, are responsible for reducing fire risk, by managing fuel load in their designated areas to ensure that appropriate measures are taken before the commencement of the declared bush fire season (refer Fire and Emergency Services Act, 2005) to protect assets (both developed and natural) and reduce bush fire hazards. Management actions should be based on an assessment of the actual risk rather than perceived risk and may only be implemented on land with the landowner's consent. For this reason, risk assessments will be undertaken on a site-by-site basis. Residents can contact Fire Prevention Officers at the Council for advice and guidance how to conduct a fire risk assessment on their private property and prioritise actions that reduce fire risk. Fuel reduction in roadsides specifically is discussed in more detail in the roads and roadside reserves section and the Rural City of Murray Bridge Roadside Vegetation Management Plan, 2014-19.



**Table 5 - Objectives, strategies and actions for Bushfire Management**

<b>Objectives:</b>		
Reduce bushfire fuel load while maintaining native vegetation of habitat and conservation value		
<b>Strategies:</b>	<b>Actions:</b>	<b>Priority</b>
Undertake a proactive, strategic and practical program to balance bushfire management with biodiversity outcomes	Develop a Woody Weed Control program in areas of Conservation Value to reduce fuel load and improve habitat quality	High
	Develop procedures for Council staff/contractors in sites with remnant or listed vegetation and seek guidance for best practice with CFS & DEWNR.	Medium



## 5.6 Roadside Reserves

The Rural City of Murray Bridge recognises the value of our Council road reserves. Roadside reserves are often the only remaining areas of remnant native vegetation, some of which have become highly fragmented and isolated. These remnants are highly valued for their biological diversity serving as important wildlife corridors, a seed source for revegetation and areas of species habitat.

The Rural City of Murray Bridge Roadside Vegetation Management Plan (2014-19) has been developed to guide Council in the management of its roadside reserves in a sustainable manner. The Plan will assist Council work crews and contractors by setting clear policies and guidelines for activities affecting roadside vegetation. The Plan includes information on management issues such as installation and maintenance of services, roadside maintenance and clearance for fencelines and access to adjoining land.

Many roadside reserves in the region contain remnant native vegetation of conservation value. These roadside reserves have been marked using Roadside Marker System. The signage makes Council work crews and contractors aware of vegetation of conservation value within our Council Road Reserves.

**Table 6 - Objectives, strategies and actions for Roadside Reserves**

<b>Objectives:</b>		
Maintain road safety while supporting biodiversity value		
<b>Strategies:</b>	<b>Actions:</b>	<b>Priority</b>
Clarification and communication of responsibility, approach and method of roadside vegetation management.	Implement the Council Roadside Vegetation Management Plan and develop fact sheets with regard to: a. Roadside weeds b. Bushfire management c. clearance of NV for fencelines	High
	Review and map Roadside Marker Sites to determine condition and prioritise weed treatment	High



## 5.7 Habitat Quality

Native vegetation, particularly remnant, is important for biodiversity conservation through the provision of habitat. Native flora and fauna have differing needs, which require the maintenance of a variety of habitat types across a landscape. Every element within an ecosystem plays a vital role in the survival of individual species. The loss and degradation of habitat quality is one of the key reasons for the decline in native plant and animal populations. Good quality habitat not only offers food and resources for native wildlife, but also offers refuge from predators and disturbances in surrounding areas.

Best practice for managing habitat quality is generally to (in order of priority) identify, protect and maintain areas of good condition, improve condition of degraded habitat followed by habitat reconstruction then linking habitats together.

Weeds are identified as a key cause of habitat degradation. They compete with native species, commonly increase bushfire fuel load, and can also greatly impact visual amenity. Weeds throughout the district are profuse, particularly noted in roadsides, railway corridors, in reserves with remnant vegetation or on private land. The battle to suppress invasive weeds is ongoing and is the most commonly undertaken and resource intensive activity by the conservation community, Council staff and SA MDB NRMB. Due to the persistent nature of weed invasion, weed control planning should be strategic, practical, long-term and outcomes oriented which recognises the need for ongoing maintenance.

Woody weeds contribute to higher fuel loads, which increase the intensity of fires which inhibits the natural regeneration of native vegetation and increases risk to private property. As such, woody weed management in areas of high conservation value not only reduces risk of fire, but also increases habitat quality. Accordingly, woody weed management will be prioritised throughout the district.

While weeds can be invasive and generally reduce habitat quality, they can also play an important role in providing habitat and resources, particularly in degraded habitats. When managing introduced plant species it is vital to recognise what they offer in terms of resources to native fauna and plan their treatment accordingly to ensure this support is not removed altogether from the local environment. Pest plant removal should be staged so as to minimise impact on species dependent on them.

Other threats include grazing (by feral animals, livestock and even overpopulation of native fauna), development and predation.

Roads and road reserves also play a vital role in habitat provision. This is discussed in more detail in section 5.4 Connectivity and Linkages.



**Table 7 - Objectives, strategies and actions for Habitat Quality**

<b>Objectives:</b>		
Maintain good quality habitat for flora and fauna		
<b>Strategies:</b>	<b>Actions:</b>	<b>Priority</b>
Reduce habitat degradation by protecting and maintaining remnant vegetation.	Develop a Woody Weed Control program to reduce fuel load and improve habitat quality	High
	Conduct native vegetation surveys on key council reserves and prioritise action plans for sites of highest biodiversity value and; a. Prioritise weed management in reserves of high conservation value b. Undertake regular monitoring of high value sites to assess success of action plans	High
	Support volunteers conducting weed control and revegetation.	High
	Keep a register of Council areas where known populations of threatened or declining native vegetation species are present and prioritise management	High
	Develop procedures for staff & contractors for works in environmentally sensitive areas including best practice in; a. Broomrape affected areas b. watercourse management	High



## 5.8 Sustainable Land Management Practices

The Rural City of Murray Bridge is responsible for the management of a number of reserves and road reserves through its biodiversity, parks and reserves, road reserves and bushfire management programs, and is able to adjust its land management practices to maximise biodiversity outcomes. This is a high priority for both Council and the conservation community.

There is a diverse range of land managers operating within the district with differing primary objectives. For example, private landowners may have an agrarian, amenity landscaping, development, biodiversity or bushfire management focus, while government agencies or industries may have one or more of a water quality, biodiversity, conservation, bushfire mitigation, pest plant and animal control or primary production focus. It is possible to balance these with biodiversity considerations to minimise any detrimental impacts.

Council's influence over private land managers is limited, but it does have a direct relationship with most private land managers in some capacity, and a good working relationship with South Australian Murray-Darling Basin Natural Resources Management Board (SA MDB NRMB). This enables the Council to advocate and in some instances facilitate delivery of biodiversity outcomes in a support role to the delivery of the SA MDB NRMB program. Council is also in a position to develop and formalise partnerships and agreements with relevant agencies, committees, industries and organisations, or play a facilitation and support role to active groups aiming to achieve biodiversity related objectives.

**Table 8 - Objectives, strategies and actions for Sustainable Land Management Practices**

<b>Objectives:</b>		
Encourage and further develop land management knowledge, skills and understanding by private landowners, Council staff and contractors.		
<b>Strategies:</b>	<b>Actions:</b>	<b>Priority</b>
<p>Adopt a proactive role to identify and adopt best practice staff and contractor sustainable land management procedures</p> <p>Encourage sustainable watercourse management to protect habitat and water quality</p>	<p>Develop procedures for staff and contractors for works in environmentally sensitive areas in liaison with experienced groups and organisations, including best practice in;</p> <p>a. Broomrape affected areas b. watercourse management</p>	High



## 5.9 Community Capacity Building

The Rural City of Murray Bridge is fortunate to have passionate conservation community members who volunteer in research, strategic and on-ground conservation activities. As the Council's resources are limited, it is vital that the Council work closely with volunteers in our environment programs along with the existing conservation groups to engage local knowledge and support to facilitate biodiversity outcomes already being delivered by these groups and encourage outcomes that work to the objectives of the Strategy. Council also supports community biodiversity programs and projects which include education and awareness through the Council Community Grants programme.

**Table 9 - Objectives, strategies and actions for Community Capacity Building**

Objectives:		
Generate community interest and facilitate community involvement in conservation activities through Council's Volunteer Programs.		
Build community capacity to deliver biodiversity outcomes.		
Continue to develop and grow our volunteer involvement, activities and partnerships.		
Strategies:	Actions:	Priority
Improve knowledge and understanding of biodiversity by general community and foster a culture of biodiversity mindfulness and pride in the District.	Facilitate initiatives to generate volunteer recruitment – e.g. promote enjoyment of native landscapes, building linkages with schools and corporate volunteering	Low
Continue volunteer recruitment by providing the general community with information regarding Council's volunteer opportunities.	Identify how and where community can participate and actively promote volunteer groups and achievements	Medium
Facilitate coordination of volunteer effort and development of volunteer skills.	Provide administrative support in distributing information, chairing minutes, providing a meeting space Advise and refer volunteers to training opportunities	Medium
Increase communication opportunities between the Council, general community and volunteers and value community knowledge and expertise.	Celebrate and communicate outcomes and achievements via monthly volunteer newsletter Acknowledge volunteer contribution and effort via events/functions	High



	Provide a forum for environmental and biodiversity groups to connect with each other and obtain information, pool resources and share successes	
Continue to support community projects to deliver positive biodiversity outcomes	Actively promote Council Community Grants program. Provide technical, financial and material support. Continue to develop partnerships with local volunteer groups e.g. EHMPCG, GWLAP, MMLAP, Kanmantoo Callington LandCare & Bush for Life. Assess biodiversity value of council reserves and prioritise action plans for sites of highest value. a) Prioritise weed management in reserves of high conservation value. b) Undertake regular monitoring of high value sites to assess success of action plans. c) Involve community on development & implementation where possible.	Medium
Liaise with community groups prior to undertaking activities on Council land they are active on	Develop communications procedure for liaison with community groups prior to undertaking activities on their related sites.	Medium
Improve communication within Council between Planning and Management on biodiversity sites	Ensure consistency and strong leadership and support.	High





## 5.10 Partnerships

The establishment of new partnerships and reinforcement of existing ones is an important component of ensuring good communication, sharing knowledge of available resources and coordination of on-ground works. Currently biodiversity planning and management work within the district is undertaken by numerous agencies, non-government organisations, Council and community groups. These include the SA MDB NRMB, Department of Environment, Water and Natural Resources, Landcare, Native Vegetation Council, Eastern Hills and Murray Plains Catchment Group, Goolwa to Wellington Local Action Planning Association, Murray Mallee Local Action Planning Association, Ngarrindjeri, Aboriginal Learning on Community, Kanmantoo Callington LandCare and Trees for Life.

Clear roles and responsibilities between these numerous organisations and groups ensures that resources and actions are not duplicated and work progresses in a transparent and coordinated way in order to achieve maximum biodiversity benefit.

Most major external grants also specify partnerships as one of the assessment criteria. If these relationships and partnerships already exist and are delivering outcomes in a coordinated manner, they increase the chances of success in grant applications.

**Table 10 - Objectives, strategies and actions for Partnerships**

<b>Objectives:</b>		
Improve, expand on and develop new partnerships that assist in biodiversity planning, management and funding opportunities within the region		
<b>Strategies:</b>	<b>Actions:</b>	<b>Priority</b>
Reinforce and develop relationships, synergy and communication between agencies, Council and community groups.	Develop an Agreement with SA MDB NRMB to clearly define roles and specific areas of control and management.	High
	Identify further organisations or partnerships that will expand the biodiversity networks within the region specifically to assist in funding applications	High



## 5.11 Resources and Funding

The Rural City of Murray Bridge has extensive areas of habitat and conservation value. Successful biodiversity management takes time and care, requiring skilled on-ground resources familiar with endemic plant species and minimal disturbance techniques to ensure that outcomes and targets are in line with Council objectives. As Council resources are limited, external funding enables a more expansive biodiversity program.

Grant funding is available to Local Government with differing assessment criteria, partnerships, amount available and delivery mechanisms. A number of Federal and State Government grants are accessible, including the Biodiversity Fund and Caring for Our Country. The development of this Strategy will stand Council in better stead to undertake a project that aligns with State and Federal biodiversity management objectives. Obtaining a grant can provide additional resources to enable biodiversity works to be carried out. With or without external funding, budgets must be aligned to a realistic, practical and achievable of program of works.

**Table 11 - Objectives, strategies and actions for Resources and Funding**

<b>Objectives:</b>		
Develop a realistic program of works with available resources and funding and explore further opportunities for grant funding		
<b>Strategies:</b>	<b>Actions:</b>	<b>Priority</b>
<p>Develop a program that identifies biodiversity priorities for the region and aligns available funding and resources to the tasks</p> <p>Investigate and develop a process for applying for relevant grants and funding</p>	<p>Investigate opportunities for additional resources for on-ground ongoing management of biodiversity</p> <p>a) identify available grant funding and relevant criteria to determine best fit projects</p> <p>b) Apply for funding</p>	High



## 6 MONITORING AND EVALUATION

Council land with high conservation remnant vegetation or habitat value will be assessed using the Native Vegetation Council's Bush Rapid Assessment Technique (BushRAT). This method is derived from the Nature Conservation Society of South Australia's 'Bushland Condition Monitoring' (BCM) methodology. The BushRAT methodology uses an informal quadrat of approximately 1 ha rather than the 30m x 30m quadrats used in the BCM methodology.

The Rapid Assessment Technique is intended for use in most assessments undertaken within the Native Vegetation & Biodiversity Management Unit within Department of Environment, Water and Natural Resources, including clearance via clearance application, clearance via Regulation, potential SEB offset areas, Heritage Agreement assessments and compliance assessments.

The Rural City of Murray Bridge Environment Officers have been trained in the Native Vegetation Council's BushRAT and Bush Condition Monitoring methodologies.

Each area to be assessed is termed an 'application area', within which different vegetation associations are identified and then linked with and compared to a 'benchmark' vegetation community. Each identified vegetation association is termed a 'site', within which a representative 1 ha quadrat is surveyed. One datasheet is completed per site.

Three 'components' of the biodiversity value of the site are measured and scored: vegetation condition, conservation value and landscape context. Vegetation condition is the main component for which field data is gathered.

Using the BushRAT methodology, Council will be able to quantitatively assess the condition of these sites, and the data collected will be able to be utilised by the Native Vegetation Council to contribute to state-wide datasets. The initial BushRAT assessment for each site will benchmark its condition for comparing against subsequent assessments to ensure that the management or action plan for that site is improving, or at least maintaining, site condition. If the follow-up assessments indicate that site condition is deteriorating, the action, works or management plan for that site will need to be adjusted to ensure that site condition is being maintained.

The Strategy itself will adopt an adaptive management approach. This will enable the Council to qualitatively assess success of the overall Strategy objectives and adjust actions if necessary.



## 7 APPENDICIES

### 7.1 Appendix 1 - Glossary

**Adaptive management** - an approach to the management of natural resources that is based on learning by doing, and on making decisions as part of an on-going process of monitoring, review, and adaptation. A planned course of action is kept under constant review, and is adapted where appropriate as new information becomes available from the monitoring of results, publication of new findings and expert judgments, and changing needs of society.

**Asset Protection Zone (APZ)** - an area surrounding an asset, managed to reduce bush fire fuels to a level that will minimise the impact of fire on that asset. The APZ serves as a buffer zone between an asset and the bush fire hazard. The primary purpose of the APZ is to ensure that a progressive reduction of bush fire fuels occurs between the bush fire hazard and any habitable structures within the development or other natural asset.

**Biodiversity** - the degree of variation of life forms within a given species, ecosystem, biome, or an entire planet. Biodiversity is a measure of the health of ecosystems.

**BushRAT** - 'Bush Rapid Assessment Technique', a rapid native vegetation assessment survey methodology developed by the Native Vegetation Council.

**Ecosystem** - a biological community of interacting organisms and their physical environment.

**Ecosystem services** - the biological transformation of a set of natural assets (soil, plants and animals, air and water) into things that we value. For example, when fungi, worms and bacteria transform the raw "ingredients" of sunlight, carbon and nitrogen into fertile soil this transformation is an ecosystem service.

**Endemic** - a plant or animal that is native to a certain limited area.

**Enhance** - to increase or improve native vegetation or habitat quality, value, or extent.

**Habitat** - natural home or environment of an animal, plant, or other organism.

**Heritage Agreement** - a contract between a landholder and the State Government for the protection in perpetuity of a particular area of native vegetation. In signing the agreement the landowner becomes eligible to receive financial assistance for the management of the land, a rate rebate on the Heritage Agreement land and fencing assistance if required.

**No net loss** - overall policy goal balancing habitat or native vegetation loss due to economic development with reclamation, mitigation, and restorations efforts of habitat or native vegetation, so that the total area of area of habitat or native vegetation in the state does not decrease, but remains constant or increases in perpetuity.

**Precautionary Principle** - "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation" (Rio declaration, 1992).



**Principles** - guiding ideals used to assist in making decisions.

**Provenance** - the geographic area and physical environment from which a supply of seeds or pollen was obtained. Seedlings will generally grow best in locations similar to their native region.

**Qualitative** – Decision making data which is descriptive rather than numerical, focussing on the how and why.

**Quantitative** - Decision making data which can be measured in numbers, assigning a numerical score, order or describing how many, how long and how much.

**Resilience** - The capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary.

**Restoration** - The process of repairing a vegetation community or habitat so as to return it to its original condition.

**Revegetation** - replanting endemic plants similar to what existed before the site was disturbed. Revegetation can increase the area of suitable habitat in the landscape, improve the quality of existing habitat and help to link remnant or isolated habitats by providing 'stepping stones' and corridors.

**Significant Environmental Benefit (SEB)** - A condition after a clearance application is approved to ensure that the clearance is offset by restoration work that provides a significant environmental benefit

**Strategic planning** - an organization's process of defining its direction, and making decisions on allocating its resources to pursue this strategy. In order to determine the direction of the organization, it is necessary to understand its current position and the possible avenues through which it can pursue a particular course of action. In many organizations, this is viewed as a process for determining where an organization is going over the next 20 years or—more typically—3 to 5 years.

**Strategy** - a plan of action or policy designed to achieve a major or overall aim. Aim is usually determined by a process of strategic planning.

**Sustain** – to maintain or hold native vegetation or habitat quality continuously at a certain level.

**Translocation** - A change of location

**Vision** outlines what the organization wants to be, or how it wants the world in which it operates to be (an "idealised" view of the world). It is a long-term view and concentrates on the future. It can be emotive and is a source of inspiration. For example, a charity working with the poor might have a vision statement which reads "A World without Poverty."



**Weeds** – plants growing where they are not wanted and in competition with desired plant species.

**Woody Weeds** – any perennial weed that has a woody stem including pine, olive, broom, salignus wattle, cotton bush and boxthorn.



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## 9 ACKNOWLEDGEMENTS

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