City of Marion *Biodiversity Plan* 2024-2029

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CITY OF MARION



Kaurna Acknowledgement

Ngadiu tampendi Kaurna meyunna yaitya mattanya yaintya yerta

This Kaurna acknowledgement was prepared in consultation with traditional custodians.

Acknowledgement of Country

The City of Marion acknowledges we are situated on the traditional lands of the Kaurna people and recognises the Kaurna people as the traditional custodians of the land.

Cover image: Pale Fanflower

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Introduction

Purpose of the plan

The City of Marion Biodiversity Plan 2024-2029 will provide the overarching framework to assist management, enhancement and protection of natural areas and biodiversity for the next 5 years. The plan addresses the need for consideration of biodiversity within the context of council's management and operations by identifying values and issues and presenting strategies and actions that can be undertaken.

Protecting the natural environment and improving connection with nature are key elements of the 'Valuing Nature' theme of the City of Marion Community Vision. The City of Marion Strategic Plan 2019–2029 seeks improved condition, diversity and connectivity of our ecosystems as well as identifying the challenges around increasing impacts and costs of remnant vegetation management due to climate change.

Council has committed to deliver this Biodiversity Plan as a priority in the City of Marion Business Plan 2023–2027 in response to feedback from our community identifying improved open spaces and environments as a top priority for the next 4 years.



White Fan Flower in Manunda Way Conservation Reserve

What is biodiversity?

Biodiversity refers to the variety of life forms in a given area. It includes all living organisms, from microorganisms to plants, animals, and humans, as well as the complex networks of ecological systems and processes that support them. Nature is another term commonly used in place of biodiversity. It is often used to describe life on Earth, together with the geology, water, climate and all other inanimate components that comprise our planet. Biodiversity is often described as genetic, species and ecosystem biodiversity. It is often unique to a particular location and has evolved over millennia as a complex response to the ever-changing conditions of our planet. This spatially unique biodiversity is often referred to as being 'native' or 'indigenous' to a particular location.

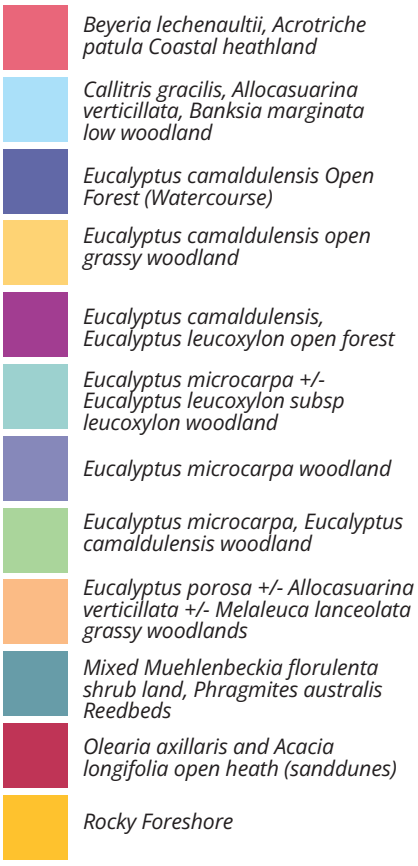
Biodiversity provides numerous ecological, economic and cultural benefits. It plays a crucial role in maintaining the health and resilience of ecosystems including regulating the climate, purifying the air and water and providing natural resources such as food, medicine and shelter.

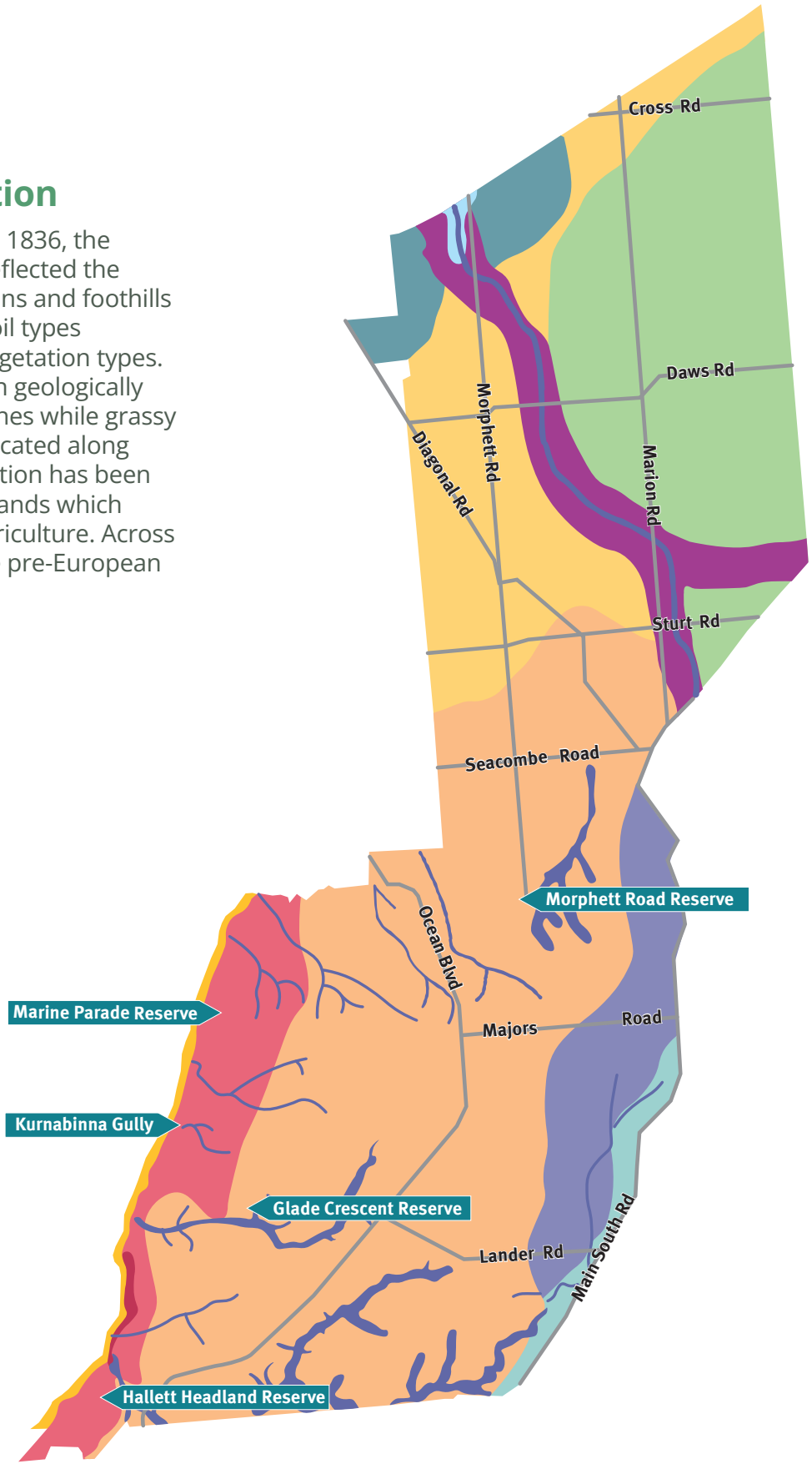
Today, as urbanisation and technological advancements distance us from the natural world, it remains crucial to preserve and nurture our bond with nature, as it sustains our physical and mental well-being while reminding us of our responsibility to protect and conserve our planet.

Biodiversity is under threat from a range of human activities including habitat destruction, pollution, overexploitation of natural resources, and climate change. Conservation efforts are essential to protect and restore biodiversity and ensure the continued provision of ecosystem services for current and future generations.

Pre-European vegetation

Before the arrival of Europeans in 1836, the landscape of the City of Marion reflected the natural features found on the plains and foothills with diversity of landforms and soil types supporting a diverse mosaic of vegetation types. Coastal heathlands were found on geologically ancient coastal clifftops and beaches while grassy woodlands to open forest were located along watercourses. Most of this vegetation has been cleared, particularly grassy woodlands which were preferentially cleared for agriculture. Across the city less than 1 per cent of the pre-European vegetation remains.





Global biodiversity decline

Australia is one of the world's most biodiverse countries; however, colonisation and urbanisation over the past 200 years has led to significant biodiversity decline. The Australian State of the Environment Report[1] highlights the alarming, continued decline of Australia's ecosystems which has generated widespread concern amongst specialists and the community. There are now calls for immediate action to address the key issues identified in the report, such as habitat destruction, climate change, pollution, lack of incentives and a poor regulatory environment.

At the global scale, declines in biodiversity and ecosystem health and their link to human health and wellbeing are the subject of a range of international conventions and agreements particularly through the direction of the United Nations Sustainable Development Goals.

Losses in biodiversity are from a range of sources. Land clearance for urban development, roads, farms or tracks for recreation are the most common threats in urban areas. Cumulative impacts over many years from impacts such as pollution, invasion by new species and changes in land management (– eg grazing of livestock or changes in fire ecology) have also led to biodiversity decline. Past land clearance has left small, isolated remnants and fragmentation of native vegetation in the City of Marion. These fragmented 'islands' that remain are often referred to as areas of 'remnant vegetation'.

Fragmented native vegetation makes it harder for species to move between areas and increases the chances of extinction due to events such as fire and disease. Small islands have limited resources with populations becoming smaller, eventually resulting in local extinctions. Small island patches are also subject to edge effects. As the patches get smaller, only the centre 'core' area remains suitable for remnant vegetation. Due to changes in light, water and weed infiltration, the edges become less diverse, effectively resulting in further habitat loss and fragmentation.

The rapid expansion of urban areas has led to a significant loss of natural habitats and biodiversity, which poses a serious threat to the health and sustainability of urban ecosystems. Cities and towns are often viewed as concrete jungles, where human activities dominate and natural habitats are replaced by buildings, roads, and other infrastructure. As a result, urban areas have become hostile environments for many plant and animal species that once thrived in these regions.

The loss of biodiversity in urban areas has a range of negative consequences, including a decrease in ecological functions, such as pollination, pest control and nutrient cycling. These functions are critical for maintaining the health and productivity of urban ecosystems and supporting the well-being of human populations that depend on them.

In recent years, there has been growing awareness of the importance of preserving and enhancing biodiversity in urban areas. Many cities are now implementing strategies to protect and restore natural habitats, such as creating green spaces, planting native vegetation and reducing the use of pesticides and herbicides. These efforts not only help to preserve biodiversity but also provide numerous benefits for human health and well-being.



2023 aerial photograph of Hallett Headland in Hallett Cove



1959 aerial photograph of Hallett Headland in Hallett Cove

1 Cresswell ID, Janke T & Johnston EL (2021). Australia state of the environment 2021: overview, independent report to the Australian Government Minister for the Environment, Commonwealth of Australia, Canberra. DOI: 10.26194/f1rh-7r05. www.soe.dcceew.gov.au

Climate change

The climate in Adelaide is projected to become hotter and drier taking us from what is currently considered a Mediterranean climate to a semi-arid climate (similar to Port Augusta) over the next 20 years[2]. In addition, sea levels are rising and coastal conditions are changing, which is expected to cause a complete loss of many coastal habitats if they do not have space to retreat.

These changing environmental conditions will result in many species no longer being able to survive in their natural range and will have a profound impact on the function of our ecosystems.

Whilst many species may no longer thrive under the changed conditions, other species will adapt leading to the potential invasion of new weeds and over-abundance of some native species.

Vegetation in and around cities offers valuable ecosystem services essential for dealing with climate change. Green spaces can significantly lower temperatures in urban areas by cooling them through processes like evapotranspiration, shading, and reflectance, helping counter the urban heat island effect.

Urban vegetation also reduces the risk of flooding through storm-water runoff management and providing shelter for our wildlife during extreme weather events. These natural environments also capture greenhouse gases such as carbon dioxide and other pollutants, which further mitigates climate change.

Biodiversity Sensitive Urban Design (BSUD)

Recognising that the City of Marion's future will remain predominantly urbanised, this plan is founded on principles of BSUD, with the goal of integrating biodiversity into our city's current and evolving urban landscape.

BSUD is a protocol and process for urban design. It aims to create urban environments that are a net benefit to native species and ecosystems, through the provision of essential habitat and food resources[3]. It represents an approach to urban biodiversity conservation that seeks to achieve biodiversity benefits in urban areas. This is in contrast to the standard 'offsetting' approach, where a loss of biodiversity in urban areas is offset with planting in less populated areas. This reduces the opportunity for urban residents to benefit from and engage with nature in the spaces where they live.

To deliver biodiversity benefits within the built environment, BSUD asks urban planning and design professionals to blur the boundaries between what is considered built and natural environments. To achieve this, BSUD must mitigate the detrimental impacts of urbanisation to create and enhance habitat within innovative, often highly modified environments. This occurs whilst also encouraging community stewardship of biodiversity and facilitating positive human–nature interactions.



New Holland Honeyeater in Silver Banksia. Photo: Stellar Momentum (John McGreevy).

2 Department for Environment and Water (2022). Guide to Climate Projections for Risk Assessment and Planning in South Australia 2022, Government of South Australia, through the Department for Environment and Water, Adelaide.

3 Garrard, G. E., Williams, N. S., Mata, L., Thomas, J., & Bekessy, S. A. (2018). Biodiversity sensitive urban design. Conservation Letters, 11(2), e12411.



Sticky Hop Bush by Sturt River - Warripari

Policy and legislation

There is a variety of different policies and legislation that impact how biodiversity is protected and managed in the City of Marion. Despite the range of potential legislation, the actual protection of native vegetation in the Adelaide metropolitan area is extremely low. Clearance of native vegetation on private land happens frequently with little involvement of biodiversity specialists or approval from councils or state government.

City of Marion staff advocate frequently for improved legislation for the protection and enhancement of biodiversity in our council area.

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Matters of National Environmental Significance (MNES) include nationally threatened species and ecological communities. The *EPBC Act* provides a range of protections. Under the *EPBC Act*, impacts to these MNES require approval from the minister. Often, MNES are identified during native vegetation surveys which are required to clear native vegetation under the *South Australian Native Vegetation Act 1991 (NV Act)*. Within metropolitan Adelaide, the NV Act does not apply and so recognition of which MNES are present within a given area are important to allow council biodiversity officers and members of the public to have input into developments which may impact known MNES.

Within the City of Marion, the presence of 'Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia' is the most commonly encountered MNES. Further information on this community is listed in the sections below.

Native Vegetation Act 1991 (NV Act)

The NV Act provides for the protection of native vegetation in South Australia. Although the *NV Act* aims to ensure the protection of areas of high conservation, the majority of metropolitan Adelaide has been excluded from the *NV Act* except for areas of the Hills Face Zone and some creek and riverlines. For the City of Marion the majority of significant vegetation occurs along the coastline and is therefore not covered by any protections under the *NV Act*.

National Parks and Wildlife Act 1972 (NPW Act)

The NPW Act provides for the conservation of wildlife in natural areas and for areas set aside for protection and management by the State Government. Most native animals in South Australia are protected under the Act and some plant species are identified for listing with various levels of conservation (endangered, vulnerable or rare). The State Government maintains these listings in schedules under the NPW Act.

Environment Protection Act 1993 (EP Act)

The EP Act is administered by the Environment Protection Authority (EPA) and provides the regulatory framework to protect the environment as a whole (including land, air and water). The *EP Act* is implemented through various tools that address environmental harm with a focus on waste, water, air and noise. Impacts to biodiversity such as vegetation clearance are not normally addressed through the *EP Act*; however, incidents that impact receiving environments (such as pollution or spills) that may affect biodiversity are.

Landscape South Australia Act 2022 (Landscapes Act)

The Landscapes Act aims to promote sustainable and integrated management of landscapes. This includes setting priorities for the management of funding of landscapes across regions in South Australia. Metropolitan Adelaide is identified as the Green Adelaide Region under the *Landscapes Act* and with the regional priorities governed by the Green Adelaide Board. Funding for activities in the Green Adelaide Region is collected by councils through the local government rates notice through a Landscapes Levy. The *Landscapes Act* also provides for the identification and management of pest plant and animal species and regulates activities related to extraction of water from the environment.



Narrow-leaf Fox Tails at Marine Parade Conservation Reserve

Vegetation

Remaining vegetation communities

The Adelaide region is recognised as one of 15 national biodiversity hotspots in Australia by the Australian Government, supporting a high diversity of flora and fauna (Wildlife Land Trust, 2018). More recently, in 2021 the National Park City Foundation awarded Adelaide National Park City status, making it the first city in Australia and the second in the world (after London) to receive this honour. The title covers all of Greater Adelaide and recognises the existing biodiversity values within the area as well as a commitment at federal, state, and local levels to continue to improve biodiversity outcomes and community connections to nature.

The City of Marion has been largely cleared for agricultural and subsequent urban development. Despite this, there are valuable and important remnant areas. The single largest patch of remnant vegetation is at the Hallett Headland Reserve (17.5ha) which contains over 100 native plant species and over 30 species considered to be of conservation significance in the Mount Lofty Ranges.

Along the coast there are other remnant coastal heathlands and cliff face vegetation, with some better examples at Marine Parade Conservation Reserve in Marino and Kurnabinna Gully and Clifftop Crescent Conservation Reserves at Hallett Cove. The coastal clifftop environment is the most significant and highest quality area of remnant native vegetation and should be the major focus of our efforts to protect remnant vegetation.

Other significant remnants occur in the Hallett Cove area, including those at Glade Crescent Conservation Reserve and Manunda Way Conservation Reserve. Glade Crescent Conservation Reserve is a large remnant patch along the Waterfall Creek, a watercourse which runs into Hallett Cove Conservation Park. This 10 hectare site has over 40 native plant species and is a critical linkage for flora and fauna from the coast to the hills.





Morphett Road Conservation Reserve: Native grassland (Left), Remnant Native Vegetation Signage (Above), Scrambled Eggs (below).



There are several important remnants close to the O'Halloran Hill Recreation Park. Morphett Road Conservation Reserve is a large patch adjacent the recreation park, that contains populations of Wallaby Grasses (*Rytidosperma sp.*), Common Chocolate Lily - Walyu (*Arthropodium fimbriatum*), Cut Leaf Goodenia (*Goodenia pinnatifida*), Curved Riceflower (*Pimelea curviflora*) and Garland Lily (*Calostemma purpureum*). Roy Lander Reserve has a small section of derived native grassland, but with some extensive populations of native plants such as White-flowered Goodenia (*Goodenia albiflora*), Pale Fan Flower (*Scaevola albida*) and Narrow-leaf New Holland Daisy (*Vittadinia blackii*).

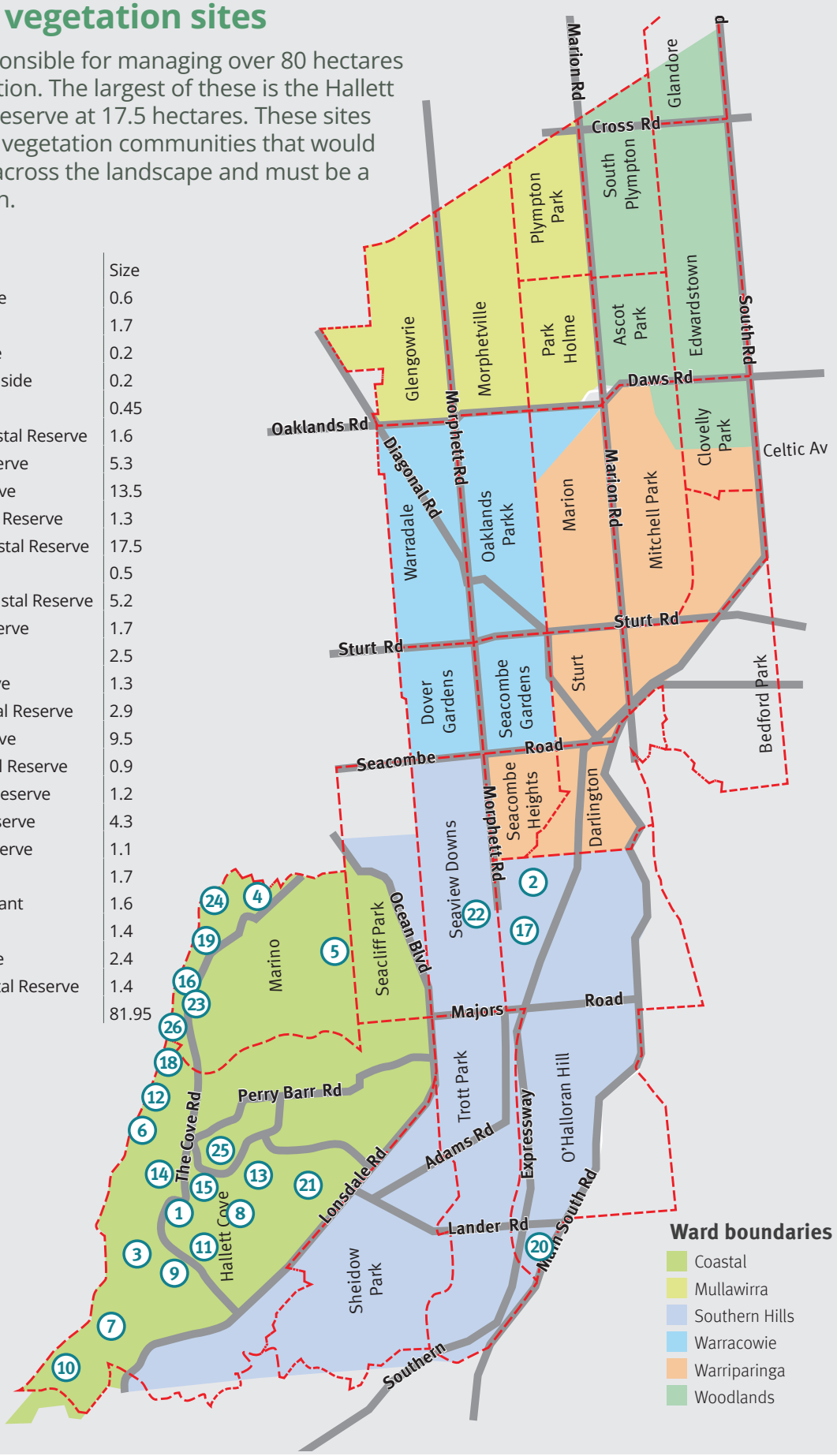
The Lower Field River (Cormorant Drive Reserve) is an important remnant area with one of the few river red gum - Karra (*Eucalyptus camaldulensis*) creek lines and steep slopes with remnant derived grasslands. Significant species found here include Tufted Bluebell (*Wahlenbergia luteola*), Blanket Fern (*Pleurosorus rutifolius*), Tall Scurf-pea (*Cullen australasicum*) and Summer Vanilla Lily - Walyu (*Arthropodium strictum*).

On the plains there are very few remnant areas, with native vegetation limited to small populations of native grasses or small stands of remnant trees. The Sturt River in Warriparinga is one significant area of river red gum - Karra (*Eucalyptus camaldulensis*) forest. Its connection to the nearby Sturt Gorge means it contains important linkages for flora and fauna.

Remnant native vegetation sites

The City of Marion is responsible for managing over 80 hectares of remnant native vegetation. The largest of these is the Hallett Headland Conservation Reserve at 17.5 hectares. These sites show examples of critical vegetation communities that would have once been present across the landscape and must be a priority as part of this plan.

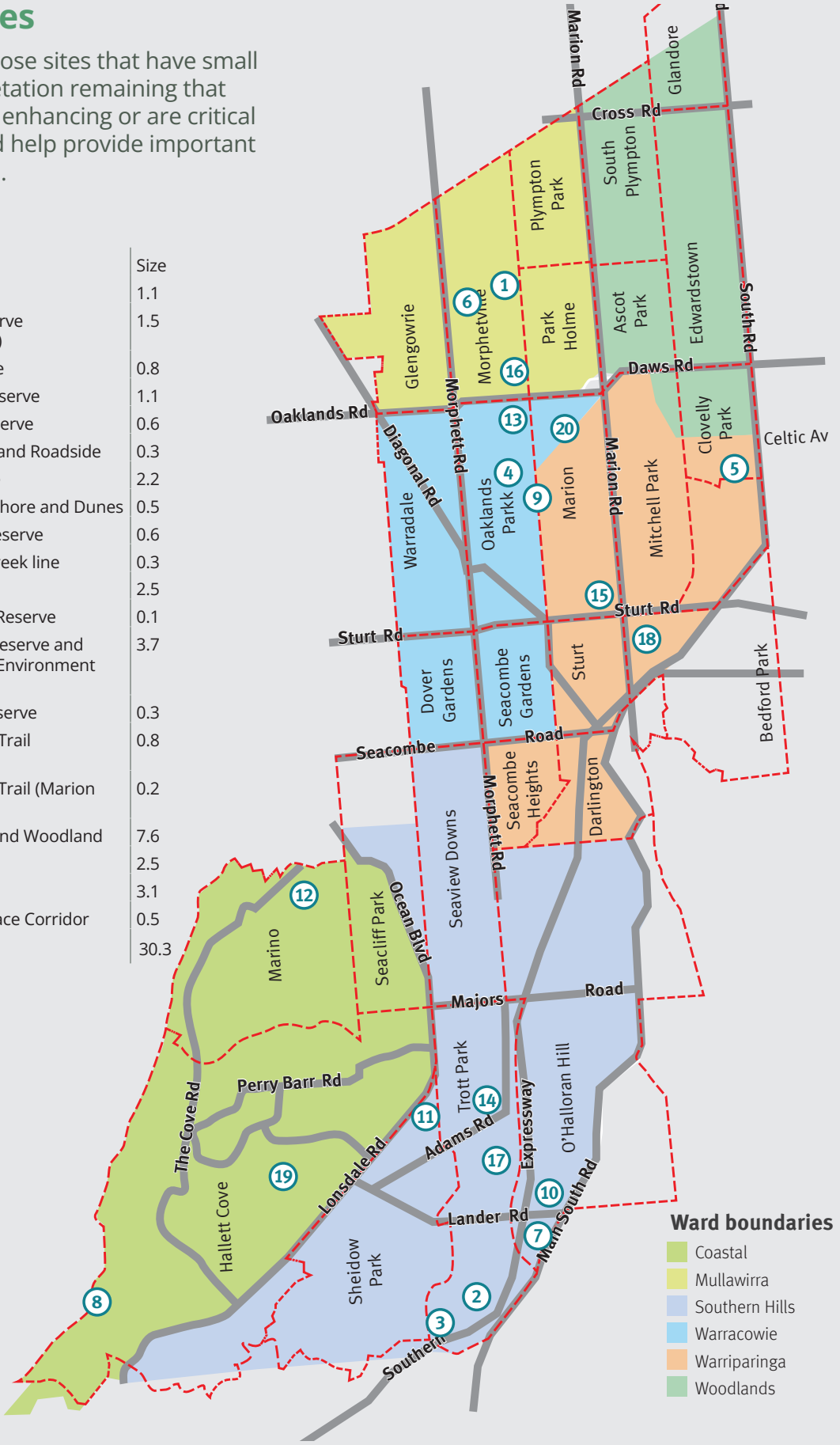
Number	Reserve Name	Size
1	Admella Drive Reserve	0.6
2	Alpine Drive Reserve	1.7
3	Arafura Drive Reserve	0.2
4	Bandon Terrace Roadside	0.2
5	Bundarra Road Verge	0.45
6	Clifftop Crescent Coastal Reserve	1.6
7	Cormorant Drive Reserve	5.3
8	Glade Crescent Reserve	13.5
9	Gretel Crescent Drive Reserve	1.3
10	Hallett Headland Coastal Reserve	17.5
11	Kalmia Court Reserve	0.5
12	Kurnabinna Gully Coastal Reserve	5.2
13	Lighthouse Drive Reserve	1.7
14	Lucretia Way Reserve	2.5
15	Manunda Way Reserve	1.3
16	Marine Parade Coastal Reserve	2.9
17	Morphett Road Reserve	9.5
18	Murnada Way Coastal Reserve	0.9
19	Murto Gully Coastal Reserve	1.2
20	Old Hallett Bridge Reserve	4.3
21	Ragamuffin Drive Reserve	1.1
22	Roy Lander Reserve	1.7
23	The Cove Road Remnant	1.6
24	The Esplanade	1.4
25	Weerab Drive Reserve	2.4
26	Westcliff Circuit Coastal Reserve	1.4
		81.95



Restoration sites

Restoration sites are those sites that have small amounts of native vegetation remaining that require expanding and enhancing or are critical linkages that if restored help provide important habitat for local wildlife.

Number	Reserve Name	Size
1	Appleby Reserve	1.1
2	Barton Drive Reserve (Upper Field River)	1.5
3	Bayley Cct Reserve	0.8
4	Bombay Street Reserve	1.1
5	Byron Avenue Reserve	0.6
6	Denham Reserve and Roadside	0.3
7	Erin Place Reserve	2.2
8	Herron Way Foreshore and Dunes	0.5
9	Kenton Avenue Reserve	0.6
10	Matthew Street Creek line	0.3
11	Nari Reserve	2.5
12	Newland Avenue Reserve	0.1
13	Oaklands Estate Reserve and Sturt River World Environment Day Sites	3.7
14	Reserve Street Reserve	0.3
15	Sturt River Linear Trail (Maldon Avenue)	0.8
16	Sturt River Linear Trail (Marion Leisure Centre)	0.2
17	Trott Park Creek and Woodland	7.6
18	Warriparinga	2.5
19	Waterfall Creek	3.1
20	Minchinbury Terrace Corridor	0.5
		30.3

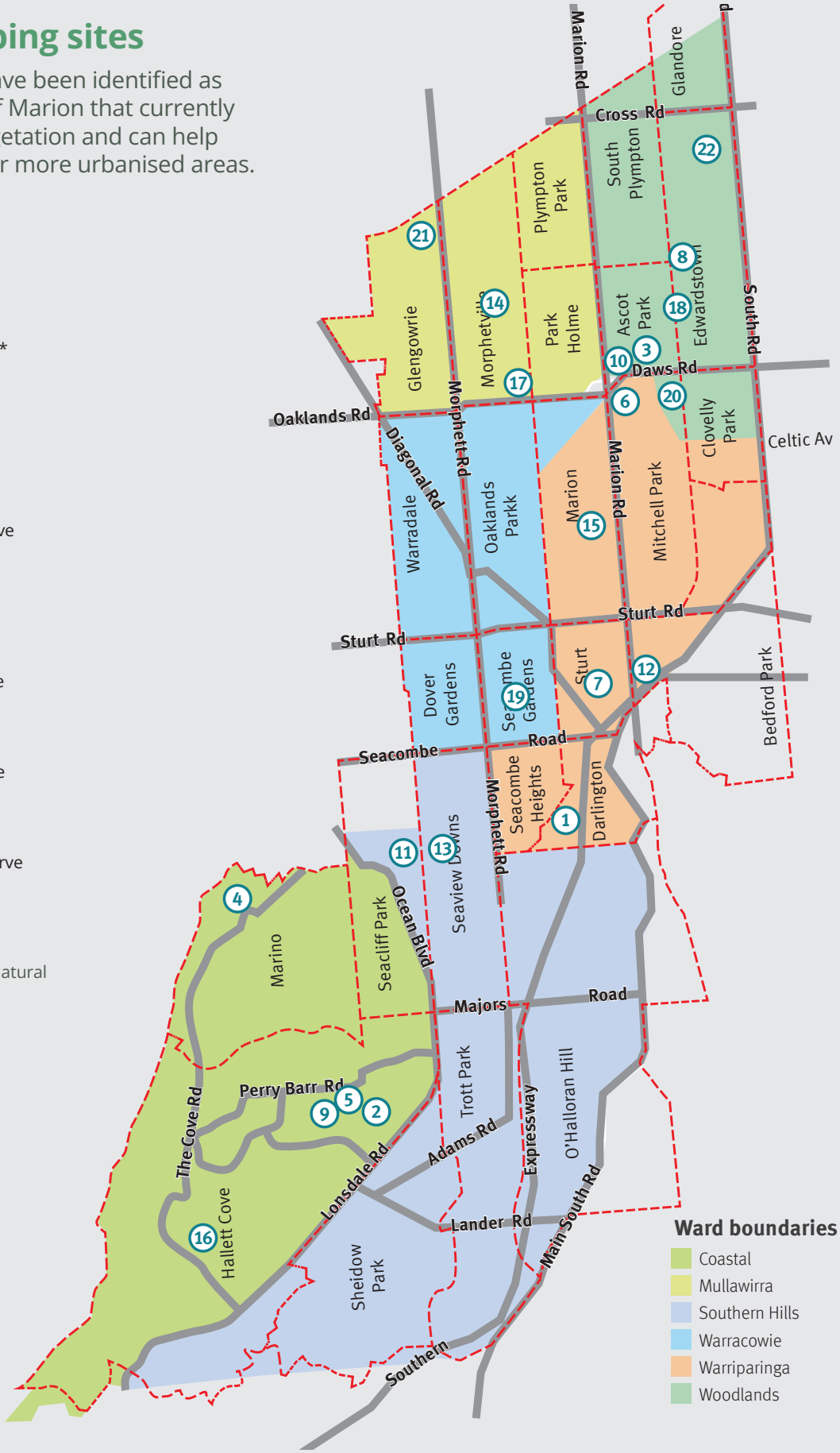


Natural landscaping sites

Natural landscape sites have been identified as locations within the City of Marion that currently have little or no native vegetation and can help increase biodiversity in our more urbanised areas.

Number	Reserve Name
1	Alpine Drive Reserve*
2	Aroona Road Reserve
3	Audrey Street Reserve
4	Bandon Terrace Reserve*
5	Beeches Road Reserve
6	Brenda Street Reserve
7	Brolga Place Reserve
8	Collins Avenue Reserve
9	Fairhill Street Reserve
10	First Avenue Road Reserve
11	Gully Road Reserve
12	Lot 30
13	Mitchell Street Reserve*
14	Na Botto Reserve
15	Oliphant Avenue Reserve
16	Pavana Reserve*
17	Radstock Reserve
18	Robert Street Road Verge
19	Russell Avenue Reserve
20	Terra Avenue Reserve
21	Willoughby Avenue Reserve
22	Wright Street Reserve

*site developed as part of the trial Natural Landscaping Plan



Threatened species

The City of Marion hosts a diverse array of rare and threatened vegetation species, each with their distinct characteristics and ecological significance. Among these species is the Rock Sida (*Sida petrophila*), distinguished by its unique yellow leaves and furry fruit. The City of Marion is fortunate to host this rare plant in Kurnabinna Gully at Hallett Cove. The Yellow-anther Flax-lily – Kurduki yuri (*Dianella longifolia var. grandis*) is an attractive drought-tolerant species, and ecologically important given it attracts native birds and insects. Despite being listed as vulnerable in the Mount Lofty Ranges, the Yellow-anther Flax-lily – Kurduki yuri has been found at Glade Crescent at Hallett Cove.

The Desert Saw-sedge (*Gahnia lanigera*) is another rare plant found in sandy soils within coastal heathland at Hallett Cove and Marino conservation sites. This species is vital for supporting the Diamond Sand-skipper butterfly (*Antipoda atralba*) which is found at Hallett Headland. Another species found at the Hallett Headland is the Bundled Fanflower (*Scaevola linearis ssp. confertifolia*). This attractive groundcover with distinctive blue or white fan-shaped flowers plays a vital role as a habitat resource, attracting and supporting native butterflies and other essential insects. City of Marion continues to work in partnership with Trees for Life to ensure the preservation of these crucial species.





(Left to right) Rock Sida at Kurnabinna Gully Conservation Reserve in Hallett Cove, Creamy Candles in Manunda Way Conservation Reserve

Other threatened species include Rohrlach's Bluebush (*Maireana rohrlachii*), a rare shrub that is found along the coastline, but its survival is threatened by weeds, trail maintenance and insufficient natural regeneration. Seed collection and propagation of this species is crucial for its ongoing presence in the environment.

Creamy Candles (*Stackhousia monogyna*), renowned for their sweet-smelling and cream-colored flowers, are found at various grassland reserves including Manunda Way and Glade Crescent. Additionally, Yellow-wash Bluebell (*Wahlenbergia luteola*) is a rare species found at various biodiversity sites around the City of Marion. These species support local wildlife by providing an important source of nectar for butterflies. These rare and threatened species reflect the unique identity and character of our region. Their presence heightens the need for protection of our biodiversity sites.

The City of Marion is committed to safeguarding threatened species through a range of proactive initiatives. These include actively supporting the Trees for Life 'Bush for Life' program and the implementation of seed collection and propagation programs. Furthermore, promoting community awareness regarding the ecological significance of these threatened species is vital for their protection.

Educational initiatives include:

- Placing informative signage in essential biodiversity locations.
- Hosting workshops and educational community sessions.

These combined efforts focus on preservation of threatened plant species, ensuring that they endure for future generations to enjoy.

Restoration principles

Protection of remnant vegetation is about bush regeneration

Bush regeneration in remnant vegetation sites does not require planting tubestock, as the seed source already exists in the plants and soil at that site.

Sites require active management

Remnant native vegetation should be considered an asset to the community and afforded the same consideration as other assets. The effective management of remnant vegetation assets requires ongoing budgets for maintenance. Bushcare or remnant vegetation management requires specialist teams and contractors with comprehensive vegetation knowledge, weed identification and control knowledge. These individuals have an ability to manage sites that change conditions from season to season. These specialist workers understand that active management involves not just tidying the areas, but also removing the weeds and other threats at the sites, which requires a very distinctive skill set.

Linkages and corridors

Prior land clearance has created small, isolated remnants of vegetation, causing fragmentation. This makes it difficult for species to move between biodiversity sites, increases susceptibility to fire and disease and depletes resources, causing population decline and local extinctions.

To buffer the impacts of isolation and fragmentation, biodiversity management should prioritise improving the genetic and structural integrity of existing habitats and facilitate linkages between remnant areas.

There are several key biodiversity linkages within the City of Marion. These include the coastal vegetation along the Hallett Cove coastal walking trail, the Sturt River – Warripari Linear Park corridor, Oaklands Wetland and the Waterfall Creek catchment in Hallett Cove. Ensuring improved connectivity between these areas and expanding their high-quality habitats are essential objectives. Small island patches are also subject to edge effects. As the patches get smaller only the centre 'core' area remains suitable for remnant vegetation. Due to changes in light, water and weed intrusion the edges become less diverse effectively resulting in further habitat loss and fragmentation.



Native Rosemary at Hallett Headland

Illegally dumped rubbish



Vegetation damage by vehicles at Hallett Headland



Threats to our vegetation

Tracks and trails

Tracks and trails increase habitat fragmentation in already small remnant patches by diminishing core habitat and creating pathways and edges through which weeds can infiltrate sites. Tracks should be strategically located to minimise fragmentation and damage. Additionally, track maintenance must be conducted in a way that avoids causing destruction to vegetation.

Inappropriate land use

Illegal dumping can smother native plants and subsequent removal is costly and causes further damage to native vegetation.

Trail bikes and off-track walking and running can damage native plants and subsequent restoration can be costly and cause further damage.

Uncontrolled dogs can chase native wildlife, kill animals, and trample vegetation.

Dog faeces can create localised nutrient spikes and upset the delicate balance of phosphorus and nitrogen resulting in native plant disease or death.

Erosion and storm water management

Stormwater runoff intensifies erosion, leading to increased loss and fragmentation of the remaining vegetation. Stormwater introduces numerous weed seeds, creating entry points for them into the residual vegetation.

Climate change

Climate change poses significant threats to native vegetation globally. As temperatures rise and weather patterns become more unpredictable, many plant species are at risk of altered growth cycles, reduced reproductive success and increased vulnerability to pests and diseases. Shifts in precipitation patterns can cause droughts or excessive rainfall, stressing native plants and ecosystems. Warmer conditions promote invasive species that can displace native vegetation. Such changes threaten not only the survival of individual species but also the overall biodiversity and functioning of these vital habitats.



Mature river red gums - Karra, Maldon Avenue Reserve.

Urban trees

The City of Marion's Urban Tree assets provide many benefits to our community including oxygen production, carbon storage, urban cooling, shade, streetscape amenity and increased property values. Our vision is to have streets and parks with mature, healthy trees that are a habitat for birds and other wildlife. The community values Marion's trees for their shade, appearance and the contribution they make to the environment. Council managed trees are unique as a living asset, with their value accumulating over time. However, their conditions change routinely based on variable environmental conditions, public interaction, and maintenance practices. For these reasons we treat them separately from the Biodiversity Plan and have created a Tree Asset Management Plan to ensure our trees can be effectively managed for future generations to enjoy.

Private land conservation

Private land conservation plays a crucial role within an urban setting, contributing significantly to the overall health and sustainability of the local environment. In populated urban areas, private properties often contain pockets of green spaces, mature trees and native vegetation that offer essential habitats for local wildlife and help maintain ecological balance. By engaging private landowners in conservation efforts, the City of Marion can:

- create a network of interconnected green corridors
- mitigate the impacts of urban sprawl and habitat fragmentation
- reduce heat island effects
- increase resilience to the impacts of climate change
- Educate and support on the importance of declared weed control.

Collaborative private land conservation efforts also foster a sense of community ownership and stewardship, as residents become actively involved in preserving their local ecosystems. In an urban context where public land might be limited, the conservation of private land emerges as an essential strategy to safeguard biodiversity, maintain ecosystem services and ensure the sustainability of the city for present and future generations.

Weed management

Weeds are a significant threat to native plants within remnant vegetation, with flow on effects to all the organisms that rely on the plants for food and habitat. Weeds compete for space, light, water, nutrients and can change soil conditions suppressing regeneration of native plants. In the City of Marion there are several key weed species that directly threaten our native vegetation:

- Gazania (*Gazania sp.*)
- Olive (*Olea europaea*)
- African Boxthorn (*Lycium ferocissimum*)
- Rice Millett (*Piptatherum miliaceum*)
- Boneseed (*Chrysanthemoides monilifera*)
- Scabious (*Scabiosa atropurpurea*)
- Artichoke Thistle (*Cyanara cardunculus*)
- Swamp Oak (*Casuarina glauca*)
- Desert Ash (*Fraxinus angustifoluis*)
- Acacia cyclops (Coastal Wattle)
- Acacia saligna (Golden Wreath Wattle)
- Cenchrus macrourus (African Feather Grass)

Managing weeds in remnant vegetation will likely be a lifelong activity as the areas are all small and isolated and thereby prone to ongoing infestation.

The City of Marion has the opportunity to adopt a proactive approach to weed management. This can be achieved through developing and implementing a comprehensive weed mapping program, to understand the extent of declared weeds within the City of Marion. By using the data collected from the mapping program, funding can be appropriately allocated based on threats of weeds to native vegetation and ecologically sensitive sites.

In special circumstances where a declared weed on privately owned land poses a threat to a remnant native vegetation site, council has the option to provide support for its removal.

The City of Marion will not use or promote any species of plant that has a weedy potential or is invasive by nature. The City of Marion will remove and actively manage pest plants declared by the minister with the *Natural Resources management Act 2004.*



Laughing Kookaburra at the Field River. Photo: Stellar Momentum (John McGreevy)

Wildlife

Our wildlife

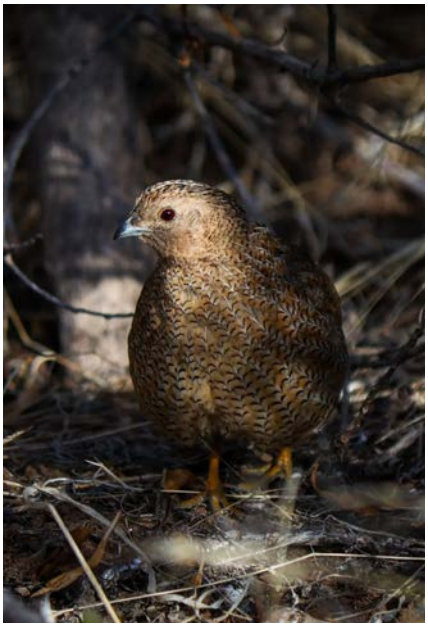
The City of Marion hosts a diverse range of native fauna, including icon species that significantly contribute to the ecology of the region. The City of Marion coast has gained recognition as a butterfly hotspot, providing a suitable habitat for various butterfly species. The Diamond Sand-skipper Butterfly (*Antipoda atralba*) is found in the coastal heathlands at Hallett Headland and exclusively relies on the Desert saw-sedge (*Gahnia lanigera*) for its survival.

This butterfly plays a crucial role as a pollinator, facilitating the reproduction of various plant species. Efforts are underway to reintroduce the Chequered Copper Butterfly (*Lucia limbaria*) to the City of Marion by protecting remnant vegetation with Native Sorrel (*Oxalis perennans)*, which is essential for the butterfly's survival.

The Eastern Bearded Dragon (*Pogona barbata*) has been spotted in biodiversity reserves through the City of Marion. Thriving in open forests, heathlands and scrub, the Eastern Bearded Dragon typically perches on exposed branches and logs. Similarly, the Shingleback lizard (*Tiliqua rugosa*) can be found in coastal heathland vegetation within Hallett Cove Conservation Park.

There are several icon birds found within the City of Marion. An excellent example is the Superb Fairywren (*Malurus cyaneus*), a small woodland bird, which lives in the understory along the Sturt River - Warripari at Warriparinga, Trott Park and Oaklands Wetlands. Additionally, the Brown Quail (*Synoicus ypsilophorus*) inhabits tall native grasslands in biodiversity reserves in the City of Marion. Revegetation of native grasses along biodiversity reserves near Glenthorne National Park may support a more diverse array of species including the Brown Quail. Large revegetation projects such as this can be conducted with the support of environmental volunteer groups and the community.





(Left to right) Eastern Bearded Dragon. Photo: L. Allen, Diamond sand-skipper Butterfly. Photo: M. Endacott, Brown Quail in Hallett Cove Conservation Park. Photo: Stellar Momentum (John McGreevy).

Other icon bird species include the Yellow-tailed Black-Cockatoo - Tiwu (*Zanda funerea*). Distinguished by its black plumage with yellow panels on the cheek and tail and can be found across the City of Marion landscape. This bird relies on trees and shrubs around City of Marion for food and shelter. Additionally, the Nankeen Night Heron (*Nycticorax caledonicus*) is an icon species residing along the Field River, where it preys on fish, frogs and freshwater invertebrates, contributing to the balance of aquatic ecosystems. Finally, the Nankeen Kestrel (*Falco cenchroides*), a small raptor, has been observed in multiple coastal locations, including Hallett Cove Conservation Park and Marine Parade Conservation Reserve.

Collectively, these icon species play pivotal roles in ecosystem function within the City of Marion. Their presence serves as a valuable indicator of the region's ecological health, emphasising the importance of preserving and safeguarding their habitats for the benefit of wildlife and the local community.






(Left to right) Yellow Tail Black Cockatoo. Photo: D. Easton, Superb Fairywren (Male). Photo: Stellar Momentum (John McGreevy), (Above) Nankeen Kestrel. Photo: Stellar Momentum (John McGreevy).


Chequered Swallowtail Butterfly. Photo: M. Endacott

Wildlife and revegetation principles

The City of Marion implements strategic revegetation strategies to enhance biodiversity and connectivity while preserving native fauna habitats. The revegetation principles in the City of Marion aim to:

- provide and expand habitat
- enhance food sources
- establish breeding grounds
- create safe migration pathways for native fauna.

Prior to revegetation, it is essential to select appropriate native plant species. This selection process involves a thoughtful assessment of the site's overall health and an evaluation of the potential implications of climate change on the area. In highly functional remnant reserves, revegetation is usually limited and primarily involves utilising species that already inhabit the local environment. In revegetation and where possible in landscaping Council will use local indigenous species. Where local indigenous plants are used they should be of local provenance to preserve genetic diversity. It is not necessary to plant climate-tolerant species as these areas are expected to naturally adapt to the effects of climate change. In certain cases, the removal of woody weeds may be necessary prior to revegetation. Conducting bird surveys can help evaluate the value of woody weeds as habitats and food sources for native fauna. If the removal of woody weeds is deemed appropriate, a staged approach is employed, typically beginning uphill or upstream, gradually progressing downhill and downstream to reduce disturbances to native flora and fauna.

Selecting the most suitable species for a revegetation site involves careful consideration. Assessing the existing remnant vegetation informs the selection of appropriate species. Additionally, revegetation may be targeted at reintroducing rare species or those that serve as hosts for specific fauna. Collaborative efforts with the South Australian Botanic Gardens and local native plant nurseries allow rare native plant populations to be secured for revegetation.

Weed control measures include sensitive weed spraying, hand weeding and the removal of woody weeds. It is fundamental to conduct weed removal only when it benefits native species.

Threats to our wildlife

Anthropogenic (human-caused) environmental change has clear impacts on fauna, including habitat loss, pollution, introduced species and disease.

Habitat loss and degradation

Habitat loss, primarily caused by vegetation clearance, has devastating effects on native fauna. Vegetation serves as a vital habitat, providing food, shelter and breeding grounds for wildlife. Vegetation loss, often caused by urbanisation and urban infill, reduces the availability of small patches of native vegetation and faunal habitat.

Faunal habitat encompasses more than just vegetation, it also includes moss-covered rocks and dead timber. These elements play a crucial role in supporting a wide range of species, such as native bees, insects and reptiles such as the Eastern Bearded Dragon, which sunbathes on logs around the City of Marion. Removing dead logs and rocks not only eliminates habitat for these species but also increases the landscape's vulnerability to erosion and diminishes the intricate details of the environment. Preserving all elements of faunal habitat is vital for maintaining the biodiversity and ecological balance.

Pests and disruptive species

Invasive species pose threats to native fauna by outcompeting them for resources and spreading diseases. Parks and reserves offer shelter and hunting grounds for pests such as cats and foxes, posing a threat to native fauna. Irresponsible ownership of domestic cats and dogs that are allowed to roam freely, worsens the issue by disturbing and killing native fauna. The Field River area is particularly affected by the damaging impact of rabbits and hares, which exerts high grazing pressure and negatively impacts natural regeneration.

The presence of aquatic pest species, notably European carp (*Cyprinus carpio*) in the Oaklands and Warriparinga Wetlands, present a pressing concern. These pests compete with native fish species and damage aquatic vegetation. Other pest species in the City of Marion include rats, domesticated ducks and geese and European (feral) honeybees (Sturt River BSUD Report, 2022).

Efficient pest management is essential for mitigating the adverse effects of invasive species on native plants and animals. Therefore, the City of Marion is taking proactive steps by implementing measures such as installing protective fencing to safeguard native vegetation against pest intrusion.



Rabbit at Upper Field River. Photo: D. Easton

Aboriginal land management

The Adelaide Plains are the traditional lands of the Kaurna people. Within the City of Marion on state government land, members of the Kaurna community are using traditional land management practices such as burning. Cultural burning can include burning or prevention of burning of Country for the health of particular plants and animals such as native grasses, bushfoods and threatened species, or to improve biodiversity in general. It may involve patch burning to create different fire intervals across the landscape and can be used for fuel and hazard reduction. Fire may be used to gain better access to Country, to open up important pathways, maintain cultural responsibilities and as part of cultural heritage management[4]. The return of cultural burning to City of Marion sites would be an important step in our reconciliation efforts and one that would have significant cultural, ecological and community benefits. Building relationships and working together on Country is an important first step for City of Marion and the Kaurna community to build a program of Aboriginal land management.



Scar Tree at Oaklands Wetlands

4 firesticks.org.au

Glenthorne Precinct

A large portion of the Glenthorne Precinct is located within the City of Marion and includes several parcels of land including the Glenthorne National Park-Ityamaiitpinna Yarta, Marino Conservation Park, Hallett Cove Conservation Park and a large area of Field River Catchment, which includes council owned land within Hallett Cove, Trott Park and Sheidow Park. The City of Marion plays a key role in contributing towards the precinct and has been working closely with major stakeholders including the National Parks and Wildlife Service, Green Adelaide, Onkaparinga Council, SA Water and the Department of Infrastructure and Transport. This plan helps identify key sites that are located within the Precinct, helping improve biodiversity, reduce weed threats and improve storm water quality.



Lower Field River



Rakali swimming at Oaklands Wetland. Photo: S. Cook

Watercourses and wetlands

Our catchments

A catchment is an area of land that gathers rainwater and directs it toward a creek or river system. Within the City of Marion, the Sturt River - Warripari and Field River catchments serve as important ecosystems that play a crucial role in supporting biodiversity.

The Field River catchment directs water towards the westward-flowing Field River, which ultimately discharges into the sea at Hallett Cove. Although original vegetation within the Field River catchment has been largely cleared or altered, remnants of Grey Box (*Eucalyptus microcarpa*) and Mallee Box (*Eucalyptus porosa*) persist alongside native plantings and invasive species. Notable plant species at the Field River's mouth in Hallett Cove include:

- Coast Saltbush - Niplina (*Atriplex cinerea*)
- Short-Stem Flax-lily – Kurduki yuri (*Dianella brevicaulis*)
- Fanflower (*Scaevola crassifolia*)
- Cushion Bush (*Leucophyta brownii*).

The Sturt River has been significantly altered by concreting and channelisation, resulting in the loss of essential natural features critical for flora, fauna habitat and ecosystem functions. Remnants of vital river red gum woodlands along the Sturt River persist; these remnants are crucial for sustaining populations of woodland bird species.

Persistent growth of woody weeds, particularly olives and desert ash, pose a challenge along the Sturt River - Warripari. These woody weed seeds flow downstream from Sturt Gorge, accumulating at Warriparinga. It is vital for the City of Marion to manage woody weeds along the Sturt River - Warripari to prevent rapid accumulation and dominance. Developing a weed mapping program

would assist in comprehensive understanding and effective control measures for declared weeds. Preserving biodiversity within the Sturt River - Warripari and Field River catchments requires collaborative efforts to maintain water quality, manage invasive species and restore degraded habitats. Support from volunteer groups like the Friends of Warriparinga, Friends of Sturt River, Friends of Lower Field River, and Friends of Upper Field River significantly aid weed management and vegetation restoration within these catchments.

Wetlands

The City of Marion has proactively initiated the construction of wetlands to manage stormwater flow and promote biodiversity. The City of Marion is home to two vital wetlands: Oaklands and Warriparinga. Both take water from the Sturt River through a series of vegetated ponds to clean and filter the water, which is either re-released in the case of Warriparinga, or used to recharge the aquifer in the case of Oaklands.

The effectiveness of wetlands in improving water quality is underscored by their proficient stormwater filtration. More than 20 species of aquatic plants thrive in the wetlands' ponds, including sedges - talnkyadli, rushes, water ribbons and slender knotweeds. These plants slow water flow, causing sediment to settle which cleans the water. Additionally, these aquatic plants absorb nutrients, purifying the water which aids their own growth.

Oaklands Wetland

Over **8000** native trees and shrubs planted

Including river red gum - Karra, Silky Tea Tree and Golden Wattle - Mirnu



Warriparinga Wetland

Over **130** flora and fauna species inhabit the area

Including diverse aquatic macroinvertebrates and reintroduced native fish species



Beyond their water filtering and stormwater management functions, Oaklands and Warriparinga Wetlands play crucial roles in supporting biodiversity

The City of Marion's dedication to preserving wetlands and aquatic ecosystems is evident through collaborative efforts with Aquasave – Nature Glenelg Trust. By conducting comprehensive surveys of native and invasive fish species at both wetlands, City of Marion aims to control introduced species and conserve native species.



Oaklands Wetland



Pacific Black Duck. Photo by John McGreevy (Stellar Momentum)







(Top) Salt Club Rush in Sheidow Park, (above) Field River Mouth at Hallett Cove, (right) Sturt River - Warripari at Warriparinga.

Aquatic biodiversity

Oaklands and Warriparinga Wetlands host a diverse range of aquatic species. At Warriparinga Wetland, the ponds are home to over 20 aquatic plant species. Among them are River Eel-grass (*Vallisneria australis*) and Water Ribbons (*Cycnogeton procerum)*. These aquatic plants provide vital habitats for native fish species and help to clean the water, absorb nutrients and increase dissolved oxygen concentrations. Additionally, the following frogs thrive at Warriparinga Wetlands:

- Spotted grass frog (*Limnodynastes tasmaniensis*),
- Common froglet (*Crinia signifera*)
- Eastern Banjo frog (*Limnodynastes dumerilii)*

Oaklands Wetland provides a habitat for more than 130 flora and fauna species, including a diverse array of aquatic macroinvertebrates and reintroduced native fish species. Notably, the nationally endangered Australasian Bittern (*Botaurus poiciloptilus*) has been found at Oaklands Wetlands. The thick sedges - talnkyadli and reeds on the edge of the wetland's ponds provide a vital habitat for this endangered bird species.

Riparian zones

Riparian zones are defined as the transitional areas between land and watercourses. Riparian zones within the City of Marion occur predominantly along the Sturt River - Warripari including the Warriparinga riparian zone and Oaklands Estate Reserve. Smaller riparian zones are also present along the Field River and Waterfall Creek.

Vegetation plays vital functions within riparian zones by supporting biodiversity, filtering water, enhancing connectivity between biodiversity sites and preventing bank collapse and undercutting. Riparian vegetation in the lower reaches of the Field River (north-west of Cormorant Drive) comprise emergent river red gums - Karra (*Eucalyptus camaldulensis*) and dense Common Reed – Witu (*Phragmites australis*) which is important for removing nutrients and sediment from the water. The upper riverbanks support areas of revegetation comprised indigenous trees, shrubs, groundcovers and tussock grasses.

Other important species found within City of Marion's riparian zones include the River Bottlebrush (*Callistemon sieberi*) and Silky Tea-Tree (*Leptospermum lanigerum*) which attract native bird species. Additionally, the Stiff Leaf Flat-sedge - Talnkyadli (*Cyperus vaginatus*) and Hop Goodenia (*Goodenia ovata*) support the ecosystem by attracting butterflies.

The City of Marion recognises the vital functions that vegetation plays within riparian zones and understands that it is essential to protect and restore riparian vegetation to enhance the structural integrity, stability and ecological functions of City of Marion's watercourses.

Water Sensitive Urban Design (WSUD)

WSUD is an approach to urban planning and design that aims to manage stormwater in a way that is beneficial to the environment and the community. WSUD and biodiversity are closely connected, as WSUD focuses on mitigating flooding, the provision of green space, the impacts of stormwater on coastal environments and maintaining stream ecology, all of which can impact biodiversity outcomes.

A great example of a WSUD project that supports biodiversity is the Oaklands Wetland. This constructed wetland is home to a diversity of wildlife including birds, aquatic life and native vegetation. The wetland relies on the existence of native vegetation to clean the water as it moves through each pond. The cleaned water is then stored in an aquifer where it can be used to irrigate 31 local reserves and public open spaces, helping to support urban biodiversity.

The City of Marion also implements WSUD into natural landscaping by planting trees and other vegetation to absorb rainwater. Specifically, the City of Marion plants a variety of native trees and plants, such as gums and bottlebrushes. These trees and plants reduce stormwater runoff by increasing infiltration and provide a habitat for native animals.

The City of Marion is committed to implementing WSUD in natural landscaping to improve the environment and the quality of life for its residents. By implementing WSUD projects, the City of Marion is helping to improve the quality of its water resources, reduce stormwater runoff and support urban biodiversity.



Silky Blue Grass at Hallett Headland

Natural landscaping

With urban growth and climate change effects, it is crucial to rethink how we design and manage existing green spaces to meet the changing needs of the community and environment. Natural landscaping is a crucial aspect of creating sustainable and resilient cities by incorporating open grassy areas, trees, shrubs, mulched sections, small watercourses, biodiversity zones and nature play areas into highly urbanised areas. Natural landscaping not only offers advantages such as creating habitats, supporting biodiversity, and managing stormwater but also has a positive impact on people's physical, mental, and social health.

In acknowledgment of these benefits, the City of Marion is dedicated to promoting the advancement of natural landscaping through the establishment of two new landscaping sites each year. This proactive effort is geared toward enhancing biodiversity within heavily urbanised areas.

As urban populations continue to grow and the importance of sustainability and well-being gains in prominence, the role of well-designed and expertly managed green spaces becomes increasingly crucial. By emphasising natural landscaping, the City of Marion can create spaces where nature and urban life harmoniously coexist.



Nari Reserve revegetation



Friends of Warriparinga.

Partnerships

Environmental volunteers

Environmental volunteers are integral to the preservation and management of biodiversity sites and our native revegetation programs. Some environmental volunteers have been involved in managing areas of council land for over 30 years, and their knowledge of our natural areas and commitment to preservation is of great value to council. The City of Marion has four conservation groups that work on council land:

Friends of Warriparinga

The Friends of Warriparinga were established to protect and enhance the last remaining stretch of Sturt River – Warripari in the early 1990s. The site is a Red Gum - Karra woodland and through weekly working bees the group has reintroduced over 90 locally native species of plants, including 11 of conservation significance. The site is also highly significant to the Kaurna people as the start of the Tjilbruke Dreaming, and hosts the Living Kaurna Cultural Centre, which makes use of the outstanding natural environment to educate the public.



Friends of Sturt River Landcare Group (above), Woodend Primary School Students and City of Marion staff planting at Upper Field River (right), Friends of Sturt River Landcare Group planting event 2023 (below)





Friends of Lower Field River

Friends of the Lower Field River is a group established by residents in 2006 to protect and care for the lower portion of the Field River and the surrounding environment at Hallett Cove.

The site contains a range of vegetation communities; a river red gum - Karra (*Eucalyptus camaldulensis*) woodland along the river, Lomandra grassland on the slopes of the valley, and Spinifex coastal sand dunes around the mouth of the river. Recent bird surveys found over 30 species of woodland and coastal birds make use of the area.

Friends of Upper Field River

Friends of Upper Field River is the newest group in City of Marion, with members forming in 2019. The initial focus was to plant a diverse understorey and scattered shrubs on a barren slope south of Barton Reserve, in an area that would have traditionally been a Mallee Box (*Eucalyptus porosa*) open woodland. This area is now well established and hosts significant numbers of insect pollinators including the Chequered Swallowtail Butterfly - Pilyapilya.

The group has also cleared a large area of feral olives down to the edge of the Field River, both through their own working bees and via a Green Adelaide Grassroots Grant to employ contractors and engage with the Kaurna community.

Friends of Sturt River Landcare Group

Friends of Sturt River Landcare Group formed in 2013 to protect and restore the Sturt River-Warripari corridor. They conduct regular working bees and educational activities at seven reserves along the river in both City of Marion and Holdfast Bay, including large community planting events at Oaklands Wetland over the past decade.

The sites are predominantly river red gum - Karra (*Eucalyptus camaldulensis*) woodlands as well as diverse wetland habitats. The group takes a diverse and inclusive approach to volunteering, welcoming many hundreds of people who may not usually get involved in conservation activities to visit City of Marion reserves.





(Top and bottom) Friends of Lower Field River

Trees for Life

Trees for Life play a vital role in helping manage some of City of Marion's most important remnant native vegetation. The longstanding partnership has seen Trees for Life help protect and enhance critical habitat at Hallett Headland, Marine Parade, Glade Crescent and Appleby Road conservation reserves in collaboration with council staff and contractors. Hallett Headland is council's most unique conservation reserve, with rare plant and animal species present including the Diamond Sand Skipper Butterfly and the Bundled Fanflower (*Scaevola linnearis ssp. confertifolia*).

Government of South Australia

The City of Marion works closely with state government agencies to help deliver positive conservation outcomes. Working collaboratively with other stakeholders means that better outcomes are achieved for our biodiversity by knowledge and resource sharing and working on a whole of landscape approach.

Green Adelaide

Green Adelaide was established as part of the 2019 South Australian natural resources management reform, along with the introduction of the *Landscape South Australia Act 2019*. Green Adelaide work closely with the City of Marion on Coastal Management, Water Resources and Wetlands, Green Streets and Flourishing Parklands, Biodiversity and Water Sensitive Urban Design, Controlling Pest Animals and Plants, Nature Education and Fauna, Flora and Ecosystem Health. An active close relationship with Green Adelaide enables additional financial opportunities through grants and in-kind support.

National Parks and Wildlife

The City of Marion is fortunate enough to have two conservation parks and a national park within the council area. Hallett Cove Conservation Park and Marino Conservation Park are significant regional biodiversity hotspots that host many rare and threatened flora and fauna species. Glenthorne-Ityamaiitpinna Yarta National Park is an important site that secures vital open space for wildlife and the reintroduction of important vegetation ecosystems that play a large role in our highly urbanised landscape. Working closely with local Parks and Wildlife officers ensures that all biodiversity across the region are better protected.

Botanic Gardens and State Herbarium

The Botanic Gardens and State Herbarium are an important contributor to the City of Marion's Biodiversity. An important partnership has been established which has enabled the re-introduction of rare and threatened plant species back into the City of Marion landscape. Species include the regionally extinct Winter Spider-orchid (*Caladenia brumalis*) and the regionally endangered Small Scurf-pea (*Cullen parvum*).









(Top to bottom) Community planting, Friends of Warriparinga, Trees for Life and Friends of Upper Field River Collaboration Site in Trott Park, Winter Spider-orchid being grown by the State Herbarium for reintroduction in Marino



Juvenile Black Shouldered Kite at Lower Field River. Photo: D Easton.

Monitoring

Flora

The City of Marion demonstrates a strong commitment to monitoring and managing its biodiversity sites, spread across 29 reserves and spanning over 80 hectares of land. To ensure accurate and consistent monitoring, the City of Marion undertakes regular vegetation condition surveys. These are commonly known as Bushland Assessment Method Surveys (BAM's). Initiated in 2016, these surveys aim to cover all biodiversity sites within a five-year cycle, effectively capturing the composition of these environments.

BAM assessments are characterised by their speed, repeatability and comprehensive nature. They rely on a scoring system to assess various indicators of site health including plant species diversity, weed scope and tree health. Each indicator's score contributes to a total biodiversity score, making it simple to track site health over time.

Repeated BAM surveys allow the City of Marion to gain robust datasets which enable the identification of trends and priority management issues. Notably, the assessments highlight areas where management efforts should be focused, including planting native vegetation, protecting grasslands, removing woody weeds and employing strategic weed control measures.

The comprehensive approach of the City of Marion extends beyond monitoring, actively informing strategic planning and project designs. For example, a comprehensive flora and fauna survey informed the design and ecological considerations for the development of the Coast Park at Hallett Cove. Similarly, a vegetation survey for the Marino Coastal Walkway project played a pivotal role in identifying threatened flora species and shaping the walkway's strategic design to minimise disturbances. These proactive initiatives highlight the City of Marion's dedication to thorough vegetation management.



Jumping Spider at Oaklands Wetlands. Photo: C. Macardle

Wildlife

The City of Marion is committed to the monitoring and assessment of local wildlife. Surveys have revealed a diverse array of animals along the coast, including a variety of birds, mammals and reptiles. Notably, the surveys documented remarkable species including the Yellow-rumped Thornbill (*Acanthiza chrysorrhoa*), as well as threatened species such as the Yellow-tailed Black Cockatoo and Sooty Oystercatcher (*Haematopus fuliginosus*). These findings reinforce the ecological importance of the region, highlighting the need for careful conservation actions.

The City of Marion's commitment to wildlife monitoring extends to areas of critical ecological value. Specifically, the Hooded Plover (*Thinornis cucullatus*), classified as a nationally vulnerable species, has been a focus of earlier faunal assessments near the mouth of the Field River in Hallett Cove.

The City of Marion is dedicated to developing a comprehensive wildlife monitoring program. This effort is driven by the commitment to understanding the local fauna and their vital ecological roles, which in turn allows the implementation of accurate and evidence-based management strategies.



CoastSnap: a beach monitoring initiative where individuals take photo from a CoastSnap station to help measure how our beaches erode and recover over time due to changing ocean conditions.



iNaturalist: an online platform where individuals can record, share and contribute to biodiversity science. Opportunities exist to promote this platform to our community and hold education sessions, scavenger hunts and participate in the Great Southern Bioblitz.



Aussie Bird Count: an annual week of observing and counting the birds in a local area and submitting information about the birds people have seen within a 20 minute period.

Citizen science

Citizen science involves community participation and collaboration in scientific research with the aim to increase scientific knowledge. Through participation in citizen science activities, community can also develop environmental knowledge, passion and a greater connection to their local environment, community and participating organisations.

Actions

Action		Complete action by:
Biodiversity Site Management	Improve health, aesthetics and ecological function of all biodiversity reserves by performing ongoing maintenance including weed control, fuel reduction and revegetation.	Annually
Revegetation	Plant 15,000 local native plants annually across Council biodiversity and natural landscapes sites to improve plant and animal species diversity.	Annually
Fencing	Install 250m of fencing annually to help protect important native vegetation.	Annually
Signage	Install interpretive signage at 2 reserves annually to help educate the community on the importance of Biodiversity within the City of Marion.	Annually
Ecological Monitoring (vegetation)	Undertake Bushland Assessment Monitoring (BAM) surveys across 7 biodiversity reserves annually to assist in determining site health and improvement.	Annually
	Create a fauna monitoring program to help understand what wildlife live and visit the City of Marion.	Annually
Biodiversity Mapping	Develop an online platform for City of Marion staff and community members to access key Biodiversity site data including flora and fauna present.	2026
	Undertake annual photo point monitoring at all City of Marion Biodiversity reserves.	Annually
Threatened Species reintroduction	Implement projects that secure rare native plant populations in collaboration with the South Australian Botanic Gardens and local native plant nurseries.	Annually
Declared Weed Mapping and Eradication Program	Develop a weed mapping program (similar to Forestree) to help understand the extent of declared weeds within the City of Marion.	2027
	Control declared weeds using the data collected from the mapping program to appropriately allocate funding based on threats of weeds to native vegetation and ecologically sensitive sites.	Annually
Seed Collection and Propagation	Develop and implement a local provenance seed collection program to help build a seed bank for use in conservation project across the City of Marion.	Annually
Environmental Volunteer Support and Development	Support maintenance at sites with environmental volunteers present.	Annually
	Undertake 4 community planting events annually in partnership with our local environmental volunteer groups.	Annually
	Undertake workshops and education sessions with community members.	Annually
Community Education	Update Biodiversity and remnant vegetation on the City of Marion website, contribute to City Limits and Green Thymes	Annually
	Provide 1 community 'walk and talk' tour each Spring at a different Biodiversity reserve annually.	Annually
	Promote Citizen Science to help educate the community around the importance of Biodiversity.	Annually
	Develop a City of Marion planting guide pamphlet for use by residents to help plant native plants in their gardens	2026
	Promote native gardens through supporting the Gazania Free Gardens plant giveaway.	Annually
Aboriginal Land Management Program	Develop and implement an annual Aboriginal Land Management Program at culturally significant sites across the City of Marion in collaboration with local first nations people.	Annually
Trees for Life 'Bush for Life' Program	Continued support of the Trees for Life 'Bush for Life' program at Glade Crescent, Hallett Headland, Marine Parade and Appleby Road Conservation Reserves.	Annually
Natural Landscaping Establishment and Maintenance Project	Establishment of 3 new natural landscaping sites annually to help boost Biodiversity in higher urbanised areas.	Annually
Private Land Conservation	Identify and map areas of remnant native vegetation on privately owned land.	2028

Master Indigenous species list at priority sites

Species Name	Common Name	SA Conservation Status	Hallett Headland Coastal Reserve	Marine Parade Coastal Reserve	The Esplanade	Westcliff Circuit Coastal Reserve	Murto Gully	Cormorant Drive Reserve	Kurnabinna Gully Coastal Reserve	Clifftop Crescent Coastal Reserve	Glade Crescent Reserve	Lucretia Way Reserve	Manunda Way Reserve	Morphett Road Reserve	Lighthouse Drive Reserve	Old Hallett Bridge Reserve	Murnada Way	Alpine Road Reserve	Warripari	Oaklands Estate Reserve	Roy Lander Reserve	Weerab Drive Reserve	Admella Drive Reserve	Arafura Court Reserve	Werlinga Reserve	Gretel Crescent Reserve	Ragamuffin Drive Reserve	Bandon Terrace Roadside	Cove Road Marino	Kalmia Crescent Reserve	Matthew Street Creek	Byron Gums Reserve	Appleby Reserve	Cove Point	Trott Park Woodland and Creekline
Acacia acinacea	Gold Dust Wattle	NT	●	●	●		●	●					●	●		●			●	●	●				●	●		●	●	●					●
Acacia cupularis	Cup Wattle	RA	●	●	●	●	●	●	●	●	●	●					●			●	●								●	●				
Acacia ligulata	Umbrella Bush	RA	●										●									●	●						●	●				
*Acacia longifolia ssp. sophorae**	Coastal Wattle			●	●																													
Acacia melanoxylon	Blackwood										●			●		●			●						●									
*Acacia notabalis**	Noteable Wattle	EN	●							●			●								●		●			●								
Acacia paradoxa	Kangaroo Thorn		●	●	●		●	●	●			●				●		●	●	●						●		●	●					
Acacia provincialis	Swamp Wattle																		●															
Acacia pycnantha	Golden Wattle			●	●				●	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●		●	●	●			●	●
Acacia rupicola	Rock Wattle	RA																																
Acacia spinescens	Spiny Wattle		●		●																												●	
Acacia victoriae ssp. victoriae	Elegant Wattle	VU	●	●			●	●					●			●	●												●				●	
Acaena echinata	Sheeps Burr																		●															
Acrotriche patula	Prickly Ground-berry	NT	●	●	●	●	●		●				●									●		●					●					
Adriana quadripartita	Coast Bitter-bush	RA						●	●																									
Allocasuarina muelleriana ssp. muelleriana	Common Oak-bush		●		●			●											●	●														
Allocasuarina verticillata	Drooping Sheoak		●	●	●			●	●	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●	●				●
Alternanthera denticulata	Lesser Joyweed	NT														●																		
Alyxia buxifolia	Native Box	RA	●	●	●	●	●		●																									
Amyema miquelii	Box Mistletoe		●																							●								
Amyema preissii	Wire-leaf Mistletoe															●																		
Aristida behriana	Brush Wire Grass		●					●		●	●	●	●		●						●	●	●						●	●			●	
Arthropodium fimbriatum	Summer Vanilla-lily		●	●		●		●		●		●	●																					
Arthropodium strictum	Vanilla Lily		●	●	●	●			●	●	●	●	●	●	●				●		●								●	●				
Asperula conferta	Common Woodruf	NT								●	●	●									●													
Atriplex cinerea	Coast Saltbush			●		●		●	●																				●					
Atriplex paludosa subsp cordata	Marsh Saltbush		●	●	●	●	●		●	●																			●					
Atriplex paludosa	Marsh Saltbush												●				●												●					
Atriplex semibaccata	Seaberry Saltbush		●		●	●	●	●	●		●	●	●			●	●		●	●	●		●	●						●				
Atriplex suberecta	Lagoon Saltbush		●					●	●			●	●						●	●	●									●				
Austrostipa blackii	Crested Spear Grass									●		●		●					●		●	●	●		●					●				
Austrostipa curticoma	A Spear Grass										●	●									●													
Austrostipa drummondii	Cottony Spear Grass	NT	●																										●	●				

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Austrostipa elegantissima	Feather Spear-grass		●	●															●	●		●							●			●			
Austrostipa eremophila	Desert Spear Grass					●				●	●			●														●	●						
Austrostipa flavescens	Coast Spear Grass		●		●	●				●																			●						
Austrostipa hemipogon	Half-beard Spear Grass		●																																
Austrostipa nodosa	Tall Spear-grass			●							●										●							●	●						
Austrostipa scabra ssp falcata	A Spear Grass		●	●					●	●	●	●	●	●	●	●			●		●	●			●				●	●					
Austrostipa sp.	A Spear Grass		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					
*Banksia marginata**	Silver Banksia							●												●															
Beyeria lechenaultii	Pale Turpentine Bush	NT	●	●	●				●															●					●	●					
Billardiera cymosa	Sweet Apple-berry															●				●															
Boerhavia dominii	Tar-vine																			●															
Bolboschoenus caldwellii	Salt Club-sedge															●				●															
Bolboschoenus medianus	Marsh Club-sedge																																		
Bulbine bulbosa	Golden Lily										●	●								●															
Burchardia umbellata	Milkmaids		●																																
Bursaria spinosa ssp. spinosa	Sweet Bursaria		●	●		●					●	●		●					●	●						●		●	●			●			●
Caesia calliantha	Blue Grass Lily		●	●	●	●						●	●																						
Calandrinia eremaea	Dryland Purslane	NT	●				●																												
Calandrinia volubilis	Twining Purslane	VU	●			●																													
Callistemon rugulosus	Scarlett Bottlebrush															●				●												●			
Callistemon sieberi	River Bottlebrush																		●																●
Callitris gracilis	Southern Cypress Pine							●		●	●			●		●					●	●			●		●	●				●			●
Calocephalus citreus	Lemon Beauty-heads	NT		●	●		●																												
Calostemma purpureum	Garland Lily		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●		●	●								●				
Calystegia sepium	Greater Bindweed	RA						●			●								●																
Calytrix tetragona	Common Fringe Myrtle		●	●																															
Carex appressa	Tall Sedge															●																			
Carex bichenoviana	Notched Sedge																		●																●
Carex breviculmis	Short stem sedge												●												●										
Carex fascicularis	Tassel Sedge	RA																		●															
Carpobrotus rossii	Angular Pigface		●		●		●	●	●	●		●																							

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Cheilanthes austrotenuifolia	Annual Rock-fern		●	●	●	●		●																										
Chloris truncata	Windmill Grass		●	●	●			●		●		●	●								●	●	●	●		●			●	●					
Chorizandra enodis	Black Bristle-rush	RA																		●															
Chrysocephalum apiculatum	Everlasting																		●	●															
Chrysocephalum semipapposum	Clustered Everlasting	NT		●																●															
Clematis microphylla	Old Mans-beard															●				●															
Comesperma volubile	Love Creeper	RA	●																																
Convolvulus angustissimus ssp. angustissimus	Pink Bindweed	NT		●							●		●	●																					
Convolvulus remotus	Australian Bindweed		●	●		●			●	●	●	●	●	●				●		●	●	●							●	●					
Correa reflexa var. reflexa	Common Correa																			●															
Crassula helmsii	Swamp Crassula	NT																		●			●												
Cullen australasicum	Tall Scurf-pea	NT		●				●			●	●							●	●										●					
Cycnogeton procerum	Water-ribbons	NT														●				●															
Cymbopogon ambiguus	Lemon-grass	RA																												●					
Cymbopogon obtectus	Silky-head Lemon-grass	RA	●							●		●				●				●															
Cynoglossum suaveolens	Sweet Hound's Tongue	NT									●																								
Cyperus gymnocaulos	Spiny Flat-sedge				●						●					●			●	●															●
Cyperus vaginatus	Stiff Leaf Flat-sedge																		●	●															●
Dampiera rosmarinfolia	Rosemary Dampiera	NT	●																					●										●	
Daucus glochidiatus	Native Carrot		●																																
Dianella brevicaulis	Short-stem Flax Lily	NT	●		●	●			●				●		●	●	●				●	●	●			●				●	●				
Dianella revoluta var. revoluta	Black-anther Flax-lily		●	●	●	●		●	●	●	●	●	●	●		●				●	●	●	●			●		●	●	●		●			●
Dianella longifolia var. grandis	Yellow-anther Flax Lily	VU									●																								
Dicanthium sericeum var. sericeum	Silky Blue-grass	VU	●							●								●																●	
Dichondra repens	Kidney Weed																		●																
Disphyma crassifolium ssp. clavellatum	Round-leaf Pigface		●	●	●	●			●	●		●					●											●	●					
Dissocarpus biflorus var. biflorus	Two-horn Saltbush	RA	●	●	●	●	●		●	●							●																	
Dodonaea hexandra	Horned Hop-bush	VU			●																													

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Dodonaea viscosa ssp. angustissima	Narrow-leaf Hop-bush	RA		●							●							●					●			●		●						
Dodonaea viscosa ssp. spathulata	Sticky Hop-bush		●	●	●	●	●	●	●	●	●			●		●		●	●	●	●	●			●			●	●	●		●			●
Drosera whittakerii	Whittakers Sundew		●								●																							
Duma florulenta	Lignum	VU																		●														
Eleocharis acuta	Common Spike-sedge																			●														
Einadia nutans ssp. nutans	Climbing Saltbush		●	●	●	●		●							●						●	●	●										
Enchyleana tomentosa var. tomentosa	Ruby Saltbush		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●		●		●	●	●		●		
Enneapogon nigricans	Black Head Grass		●	●	●	●		●	●	●	●	●	●		●	●					●	●	●			●	●		●	●				
Enterapogon acicularis	Curly Windmill Grass		●							●																								
Epilobium hirtigerum	Hairy Willow-herb																			●														
Erodium crinitum	Blue Heron's-bill	RA	●			●																												
Eucalyptus camaldulensis ssp. camaldulensis	River red gum	NT						●	●		●	●		●		●			●	●	●	●			●			●		●		●			●
Eucalyptus faciculosa	Pink Gum		●										●																					
Eucalyptus porosa	Mallee Box	NT	●	●	●		●	●		●	●	●	●	●	●	●		●			●	●	●	●	●			●	●	●				
Eucalytpus microcarpa 'Adelaide Variant'	Greybox	NT														●		●	●		●	●									●			
Eucalyptus leucoxylon ssp. leucoxylon	South Australian Blue Gum										●		●	●	●	●			●			●			●	●	●		●					
Eutaxia diffusa	Large-leaf Eutaxia																											●						
Eutaxia microphylla	Common Eutaxia		●	●	●	●	●	●	●	●						●				●				●			●	●						
Exocarpos aphyllus	Leafless Cherry	VU	●	●	●		●																						●					
Ficinia nodosa	Knobby Club-rush				●			●			●					●																		●
Frankenia pauciflora	Southern Sea-heath					●	●		●								●																	
Gahnia filum	Thatching Grass	VU																		●														
Gahnia lanigera	Black Grass Saw-sedge	RA	●	●	●	●	●			●																			●					
Geranium retrosum	Native Geranium			●					●				●																					
Geranium solanderi	Austral Geranium			●																														
Glycine rubiginosa	Twining Glycine		●	●		●		●		●		●																						
Gonocarpos mezianus	Broad-leaf Raspwort		●			●																												
Gonocarpos tetragynus	Small-leaf Raspwort					●																												
Goodenia albiflora	White Flowered Goodenia	RA									●			●				●		●	●				●									

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Goodenia amplexans	Clasping Godenia	NT	●	●	●	●	●			●		●				●												●	●					●	●
Goodenia arguta	Spur Velleia	RA																											●					
Goodenia ovata	Hop Goodenia													●					●															●
Goodenia pinnatifida	Cut-leaf Goodenia	NT	●	●										●				●	●		●	●	●	●	●	●				●				
Goodenia pussiliflora	Small-flower Goodenia	VU		●																														
Goodenia varia	Sticky Goodenia	VU			●																													
Grevillea lavandulacea spp. lavandulacea	Spider Flower			●	●																													
Hakea rostrata	Beaked Hakea																					●												
Hakea rugosa	Dwarf Hakea	NT		●	●	●	●							●																				
Hardenbergia violacea	Native Lilac		●	●	●			●				●								●								●				●			
Helichrysum leucopsideum	Satin Everlasting	NT	●																															
Hydrocotyle hirta	Hairy Pennywort	NT														●																		
Juncus pallidus	Pale Rush															●																		●
Juncus sp.	Rush																			●														
Juncus subsecundus	Finger Rush															●																		
Kennedia prostrata	Running Postman			●	●															●														
*Kunzea pomifera**	Muntries																																	
Lachnagrostis sp.	Blown-grass																			●														
Lawrencia squamata	Thorny Lawrencia	VU							●																									
Lepidosperma semiteres	Wire Rapier-bark															●																		
Lepidosperma viscisdum	Sticky Sworde-sedge		●	●	●	●				●																								
Leptospermum lanigerum	Silky Tea-tree	RA														●			●																●
Leucophyta brownii	Coast Cushion Bush			●	●	●	●		●	●																								
Lomandra collina	Sand Mat-rush	RA	●							●																								
Lomandra densiflora	Pointed Mat-rush		●	●	●	●	●	●	●	●	●	●	●	●	●		●				●				●				●	●				
Lomandra effusa	Scented Mat-rush	RA	●	●	●	●	●	●	●	●	●	●	●										●	●					●					
Lomandra micrantha ssp. micrantha	Small-flower Mat-rush		●								●																							
Lomandra multiflora ssp. dura	A Mat Rush															●																		
Lotus australis	Austral Trefoil	NT	●		●		●				●									●														
Lycium australe	Australian Boxthorn	EN							●							●	●																	
Lysiana exocarpi ssp. exocarpi	Ngantja (mistletoe)			●												●																		

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Lythrum hyssopifolia	Lesser Loosestrife																																	
Machaerina juncea	Bare Twig-rush																			●														
Machaerina tetragona	Square Twig-rush	NT																		●														
Maireana brevifolia	Small-leaf Bluebush		●	●	●	●	●	●				●					●			●									●					
Maireana enchylaenoides	Wingless Bluebush		●	●	●	●	●	●	●	●	●	●	●		●						●	●					●							
Maireana oppositifolia	Salt Bluebush						●	●		●																								
Maireana rohrlachii	Rohrlach's Bluebush	RA	●	●			●		●	●																				●				
Malva preissiana	Native Hollyhock	NT				●						●		●					●	●														
Marsilea drummondii	Common Nardoo	NT																		●														
Melaleuca brevifolia	Short-leaf Honey-myrtle	VU											●																					
Melaleuca decassata	Cross-leaf Honey-myrtle																																	●
Melaleuca halmaturorum	Swamp Paper-bark	EN														●												●						
Melaleuca lanceolata	Dryland Tea-tree	RA	●	●	●		●	●	●	●				●	●	●	●				●	●	●	●				●	●					
Microseris walteri	Yam Daisy		●																															
Minuria leptophylla	Minnie Daisy	RA	●				●																											
Muehlenbeckia gunnii	Native Sarsparilla		●	●	●	●	●	●		●		●										●	●	●									
Myoporum insulare	Common Boobialla	NT	●	●	●	●	●	●	●							●												●	●			●		
Myoporum parvifolium	Creeping Boobialla	VU		●	●		●	●								●	●			●								●	●					
Myoporum petiolatum	Sticky Boobialla	NT			●	●	●																											
Neurachne alopecuroidea	Fox-tail Mulga-grass		●																															
Nicotina maritima	Coast Tobacco	RA	●																															
Nitraria billardierei	Nitre-bush		●	●	●		●		●	●							●													●				
Olearia axillaris	Coast Daisy-bush		●		●	●		●	●	●														●					●					
Olearia ramulosa	Twiggy Daisy-bush		●	●		●		●	●	●				●		●	●	●	●	●	●		●			●		●	●	●		●		
Opercularia turpis	Twiggy Stinkweed	NT	●																															
Oxalis perennans	Native Sour Sob		●	●			●	●		●	●	●	●	●	●	●											●	●		●				
Pauridia glabella var. glabella	Tiny Star		●								●		●																					
Persicaria decipiens	Slender Knotweed																			●														
Phragmites australis	Common Reed							●								●			●	●														
Pimelea curvifolia var. sericea	Curved Riceflower	RA	●	●		●		●			●	●	●	●	●			●			●	●	●					●						
Pimelea micrantha	Small Riceflower	NT		●		●		●	●	●	●	●	●	●	●						●	●				●	●		●	●				

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Pittosporum angustifolium	Native Apricot		●	●				●		●		●		●		●			●		●	●						●	●			●			
Plantago gaudichaudii	Colony Plantain			●		●																												
Pleurosorus rutifolius	Blanket Fern					●		●																										
Poa poiformis var. poiformis	Coast Tussock-grass			●	●	●	●				●																							
Pomaderris paniculosa ssp. paniculosa	Mallee Pomaderris	NT	●	●	●		●																	●					●					
Pogonolepis muelleriana	Stiff Cup-flower	NT	●	●																														
Portulaca oleracea	Common Purslane		●																	●														
Pterostylis nana	Small Greenhood																		●															
Pterostylis pedunculata	Maroon Hood																		●															
Ptilotus angustifolius	Narrow-leaf Fox Tails	VU	●	●		●	●		●		●	●												●										
Ptilotus erubescens	Hairy Heads	RA				●																												
Ptilotus spathulatus	Pussy-tails	RA		●																				●										
Rhagodia candolleana ssp. candolleana	Sea-berry Saltbush		●	●	●	●		●	●	●			●		●					●			●	●					●					
Rhagodia parabolica	Fragrant Saltbush																			●														
Rhagodia spinescens	Spiny Saltbush	VU																		●														
Rytidosperma auriculatum	Lobed Wallaby-grass										●																							
Rytidosperma caespitosum	Common Wallaby-grass				●	●				●	●			●									●	●						●				
Rytidosperma setaceum	Bristly Wallaby Grass		●		●	●	●	●	●	●	●	●	●	●	●	●			●	●	●		●	●		●	●		●	●				
Rytidosperma sp.	Wallaby Grass Species				●				●		●		●	●	●		●	●		●	●	●	●	●	●	●	●	●	●		●				
Salsola australis	Buckbush		●	●	●	●	●		●								●							●					●					
Samolus repens	Creeping Samolus	NT																		●														
Santalum acuminatum	Quondong	RA	●	●				●																					●					
Scaevola albida	White Fanflower			●	●	●		●			●	●	●	●	●			●	●	●	●	●						●	●	●				
Scaevola angustata	Coast Fanflower	VU			●																													
Scaevola crassifolia	Cushion Fanflower	VU	●	●	●	●	●	●		●																			●					
Scaevola linearis ssp. confertifolia	Bundled Fanflower	EN	●																															
Schoenoplectus pungens	Sharp-leaf Club-rush	NT																																
Scleranthus pungens	Prickly Knawel	RA		●		●			●																									
Sclerolaena uniflora	Short-spine Bindyi	RA	●	●	●		●																	●					●					

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Senecio glossanthus	Annual Groundsel	NT	●																															
Senecio pinnatifolius var. maritimis	Variable Groundsel Elegant Yellow-top	RA	●	●		●																												
Senecio quadridentatus	Cotton Groundsel																			●														
Senecio spanomerus	Native Groundsel	NT	●																															
Senna artemisioides	Silver Senna														●												●					●		
Setaria clementii	Clement's Paspalidum		●									●																		●				
Seteria constricta	Box Grass	NT	●	●		●				●	●		●				●					●	●						●				●	
Sida corrugata var. angustifolia	Corrugated Sida	RA	●	●		●		●		●		●			●																			
Sida corrugata var. corrugata	Variable Side	RA				●											●													●				
Sida petrophila	Rock Sida	RA		●		●			●																									
Spinifex hirsutus	Rolling Spinifex							●																										
Stackhousia monogyna	Creamy Candles	NT									●	●	●						●	●														
Styphelia humifusa	Native Cranberry		●																															
Themeda triandra	Kangaroo Grass		●			●		●			●	●	●			●				●				●					●					
Threlkeldia diffusa	Coast Bonefruit		●		●	●	●			●			●		●		●																	
Thyridia repens	Creeping Monkey-flower	RA																		●														
Thysanotus baueri	Mallee Fringe-lily	EN	●																															
Thysanotus patersonii	Twining Fringe-lily		●							●																								
Typha dominigensis	Bulrush										●					●				●														
Vittadinia blackii	Narrow-leaf New Holland Daisy	NT	●	●	●	●					●				●				●		●													
Vittadinia australasica var. australasica	New Holland Daisy	NT		●		●					●	●	●							●	●		●		●									
Vittadinia cuneata	Fuzzy New Holland Daisy			●							●		●		●						●				●									
Vittadinia megacephala	Giant New Holland Daisy	RA	●																															
Vittadinia gracilis	Woolly New Holland Daisy		●								●									●										●				
Wahlenbergia luteola	Yellow-wash Bluebell	RA						●				●								●														
Wahlenbergia stricta	Australian Bluebell																			●														
Wurmbea diocia ssp. diocia	Early Nancy		●																										●					
Zygophyllum confluens	Forked Twinleaf	VU	●	●	●		●	●	●	●							●											●						
Zygophyllum glaucum	Pale Twinleaf	RA		●																								●	●					



Gold Dust Wattle

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