Golden Plains Shire

Biodiversity Protection Assessment

Contents

ACKNOWLEDGEMENT OF COUNTRY

Golden Plains Shire spans the Traditional lands of the Wadawurrung and Eastern Maar people. We acknowledge them as the Traditional Owners and Custodians.

Council pays its respects to Wadawurrung Elders past, present and emerging. Council also respects Eastern Maar Elders, past, present and emerging.

Biodiversity

Biodiversity is all components of the living world: the number and variety of native plants, animals and other living things across our land, rivers, coast and ocean

It includes the variety of their genetic information, their habitats and their relationship to the ecosystems within which they live.

There is a continued decline in the quality and extent of habitat of native species. Threats to biodiversity include habitat loss, weeds, pest animals and changed fire and water regimes – all of which will be exacerbated by the effects of climate change.

It has intrinsic value and is fundamental to the cultural practices of Aboriginal Victorians and is important to Victorian's identity. Maintaining healthy biodiversity is vital to the health, wellbeing and prosperity of current and future generations.

Protecting Victoria's Environment – Biodiversity 2037, Victoria State Government

State Policy on Biodiversity

Protecting Victoria's Environment: Biodiversity 2037

This plan presents a new direction for Victoria – to stop the decline of biodiversity and ensure that the natural environment is healthy, valued and actively cared for.

There are two main goals:

GOAL 1 :

Victorians value nature

By 2037 – all Victorian Government organisations that manage environmental assets contribute to environmental-economic accounting.

GOAL 2 :

Victoria's natural environment is healthy

A net improvement in the outlook across all species by 2037, so that:

No vulnerable or near-threatened species will have become endangered.

All critically endangered and endangered species will have at least one option available for being conserve ex situ or re-established in the wild (where feasible under climate change) should they need it.

We achieve a net gain of the overall extent and condition of habitats across terrestrial, waterway and marine environments.

For more information on the Biodiversity Plan visit:
www.environment.vic.gov.au/biodiversityplan

NATUREKIT

NatureKit is a layer and dataset tool to map and report on Victoria's biodiversity values and investment prospects provided online by DELWP.

NatureKit displays information on habitat datasets, species observation records, vegetation, including EVC's, Bioregions, landcover, native vegetation habitat importance maps, recent wildfires, administrative boundaries, disturbance (planned burns), planning scheme zones, wetlands and rainforest.

It can be found at
https://maps2.biodiversity.vic.gov.au/Html5viewer/index.html?viewer=NatureKit

The Strategic Biodiversity Values layer uses a combination of information on important areas for threatened flora and fauna, levels of depletion, connectivity, vegetation types and condition to provide a view of relative biodiversity importance of all parts of the Victorian landscape.

This layer helps provide an objective view of the importance of biodiversity assets and enables comparison of different areas to be made. The values within the Shire can be seen in Figure 1. The Golden Plains Shire Biodiversity Strategy uses an earlier version of this data in that report.

Strategic Biodiversity Values in Golden Plains Shire
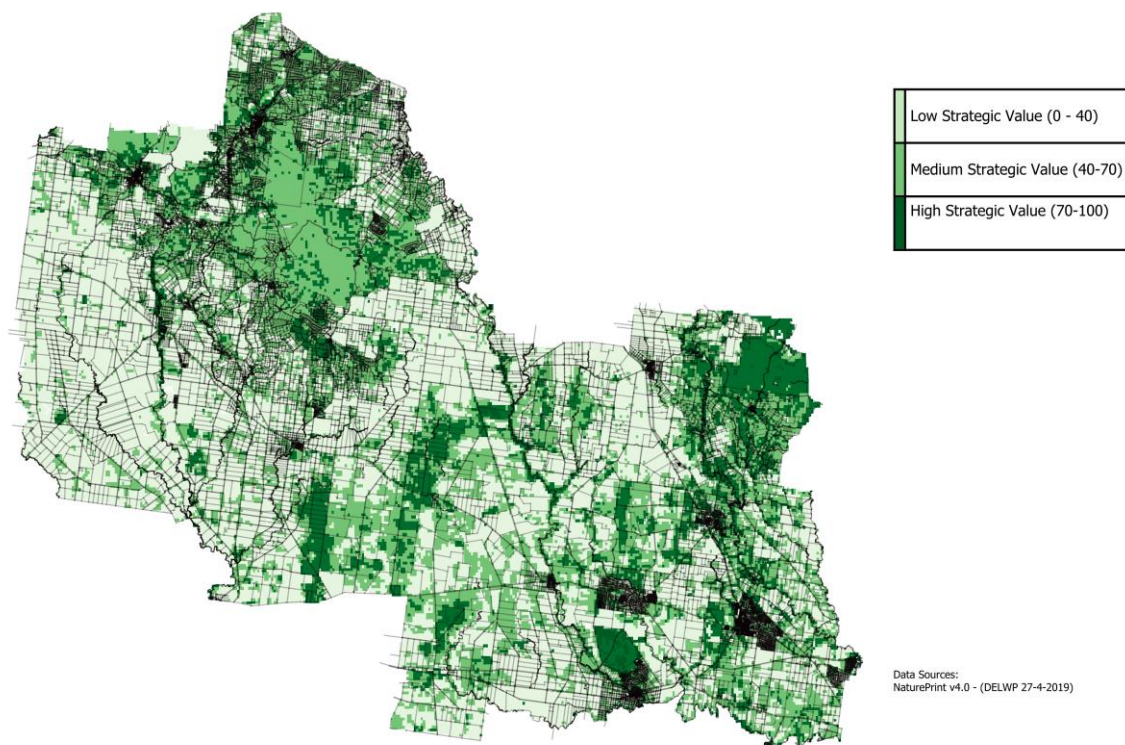
Figure 1 Strategic areas for biodiversity across the Golden Plains Shire. The strategic values of areas according to NaturePrint V4 are indicated as high (70-100, dark green), moderate (40-70, light green) or low (0-40, pale green). Black lines show property borders, with dark areas showing higher property densities in towns.

GOLDEN PLAINS SHIRE ENVIRONMENT STRATEGY

2019–2027

Vision

'Environmental sustainability underpins life in Golden Plains Shire'

Biodiversity

Protect, restore and increase the health of our natural ecosystems, biodiversity and natural habitats to ensure they survive and thrive in the Golden Plains Shire.

Targets

T 3.1.1: Increase the number of properties under an environmental covenant by 50% by 2027 using the 2019 baseline.

T3.1.2: Develop and implement management plans for Council owned and managed reserves.

Key Performance Indicators

Net gain in native vegetation for Council activities and planning approvals reported annually.

100% of major development proposals are referred for review.

Key Performance Indicators

Preserve and protect biodiversity and native vegetation through effective land use planning.

Protect biodiversity and native vegetation on private land through community engagement and enforcement.

Increase biodiversity and native vegetation on private land through community engagement and incentives.

Supporting policies and plans

- Golden Plains Biodiversity Strategy 2016

- Central Victorian Bio Links (See Attachment x)

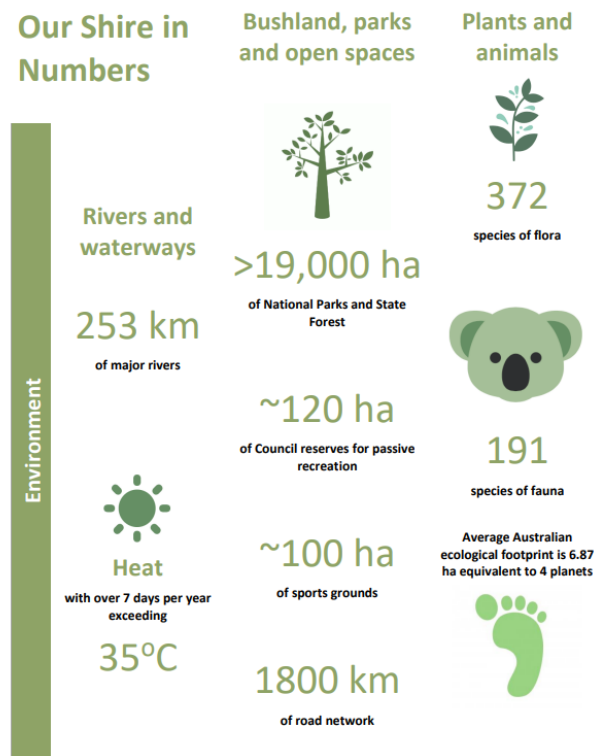- Protecting Victoria's Environment: Biodiversity 2037

Our Shire in Numbers

Bushland, parks and open spaces

Plants and animals

Rivers and waterways

253 km
of major rivers

Heat
with over 7 days per year exceeding
35°C

>19,000 ha
of National Parks and State Forest

~120 ha
of Council reserves for passive recreation

~100 ha
of sports grounds

1800 km
of road network

372
species of flora

191
species of fauna

Average Australian ecological footprint is 6.87 ha equivalent to 4 planets

Figure 2

Guiding principles, key drivers of change and environmental challenges

Guiding principles	All areas of Council have stewardship of our environment
	Environmental Sustainability
	Levels of Control Approach
	Community and stakeholder partnerships
	Leadership and good governance drive environmental sustainability
Key drivers of change	Population growth
	Our economy
Key environmental challenges	Climate change and increased vulnerability
	Resource overuse
	Ecosystem health
	Managing our agricultural sector for the environment
	Community wellbeing and connectedness to the environment

Figure 3

GOLDEN PLAINS SHIRE BIODIVERSITY STRATEGY 2016

Vision

- *To improve the biodiversity values of Golden Plains for future generations.*

- *To support a well-informed community to actively protect biodiversity within Golden Plains.*

The Shire contains approx. 75,190 ha of native vegetation, which covers 12.7% of the municipality, and there are at least 759 native plant species and 272 native animal species. There are large areas of predominantly Dry Forest in the north-east and to the east of Meredith, relatively large areas of Plains Grassland across the south and areas of Plains Grassy Woodland throughout the Shire that are vital to biodiversity conservation in the Shire.

Climate modelling predicted that future climates will be:
- adverse for Dry Forests, with conditions better in the north-west,
- moderate for Riparian Forests but more affected in the north-west,
- more adverse for Plains Grassy Woodlands in the south, and
- adverse for Plains Grasslands with the south being less affected.

Accounting for climate change, potential focal areas for future biodiversity conservation include the forests to the northwest around Linton, Smythesdale and Enfield and to the northeast between Meredith and Steiglitz, and several areas of Plains Grassland and Plains Grassy Woodland across the south.

Important threats that need to be managed to improve the chances of maintaining biodiversity under climate change include habitat fragmentation, land-use change, pest plants and animals, altered fire regimes and changed hydrology.

Habitat fragmentation is the breaking up of once continuous native ecosystems into small and isolated patches following land use change. Fragmented patches fail to support viable populations of many species including birds. Revegetation to increase the size and connectivity of patches is the primary method for mitigating the effects of habitat fragmentation.

Land use change from farming and urban development increases clearance, disturbance and degradation of native ecosystems. Limiting production systems associated with farming is implausible given the ever increasing demands for agriculture to serve an increasing human population. However protecting significant areas for biodiversity by regulating the expansion of towns and use of green belts is plausible.

The Biodiversity Strategy for Golden Plains Shire has seven key components:

1. Protect native ecosystems from clearance across the Shire.

2. Increase the understanding of biodiversity values and threats amongst the community.

3. Create 'Environmental Zones' around strategic areas where threats to biodiversity are managed and revegetation is used to buffer, extend and link existing remnant vegetation.

4. Within Focal Areas (strategic and favourable future climate), restore historical ecosystems and plant historical dominant species.

5. Within Strategic Areas (strategic but adverse future climate), recreate the ecosystem structure with resistant local species.

6. Within Favourable Areas (favourable future climate but low strategic value), restore historical ecosystems and plant historically-dominant species.

7. Within Marginal Areas (low strategic value and adverse future climate), recreate the ecosystem structure with 'climate ready' species.

Priority Areas for Biodiversity Conservation

Given the size of the challenge of conserving biodiversity under climate change, the continued dominance of production systems and the expansion of urban areas across the region, the approach is designed to be strategic about initiating current management actions. Consequently, the Strategy prioritises areas of native ecosystems that were predicted to be (a) of higher strategic value for conservation (based on NatureKit) and b) less vulnerable to the effects of climate change. Using these principles, the Shire was categorised into:

Focal Areas

Focal Areas are strategic for biodiversity conservation and are predicted to have a favourable future climate.

Favourable Areas

Favourable areas are predicted to have a favourable future climate but are a low strategic value for biodiversity conservation.

Strategic Areas

Strategic areas that are predicted to have a high strategic value for biodiversity conservation but an adverse future climate.

Marginal Areas

Marginal areas that have a low value for biodiversity conservation due to a lack of strategic value and an adverse future climate.

Key Biodiversity Strategies

The Biodiversity Strategy for Golden Plains Shire has six key strategies for biodiversity conservation across the Shire (Figure. 2).

1. Protect native ecosystems from unnecessary clearance across the Shire.

Consider establishing *Vegetation Protection Overlays* for areas that contain significant vegetation or provide important habitat corridors for native fauna.

2. Create 'Environmental Zones' around strategic areas where threats to biodiversity are managed and revegetation is used to buffer, extend and link existing remnant vegetation.

'Environmental Zones' are proposed around Focal Areas and Strategic Areas for biodiversity (Figure 4). These areas should be protected from further clearance and developments such as subdivision or urbanisation.

3. Within Focal Areas, restore historical ecosystems and plant historical dominant species.

These are the best parts of the shire to focus efforts to restore native ecosystems and replanting of these areas with local remnants.

4. Within Strategic Areas, recreate the ecosystem structure with resistant local species.

Maintain the structure characteristics of the historic ecosystem (e.g. Dry Forest) but with a different species composition to adapt to climate change.

5. Within Favourable Areas, restore historical ecosystems and plant historically-dominant species.

Replant historical ecosystems guided by plants currently found in local remnants in a similar landscape position.

6. Within Marginal Areas, recreate the ecosystem structure with 'climate ready' species.

These areas are considered the least important to biodiversity conservation in the shire. The focus is on replanting with species know to be 'climate ready'.

Conceptual diagram of Biodiversity Strategy for Golden Plains Shire
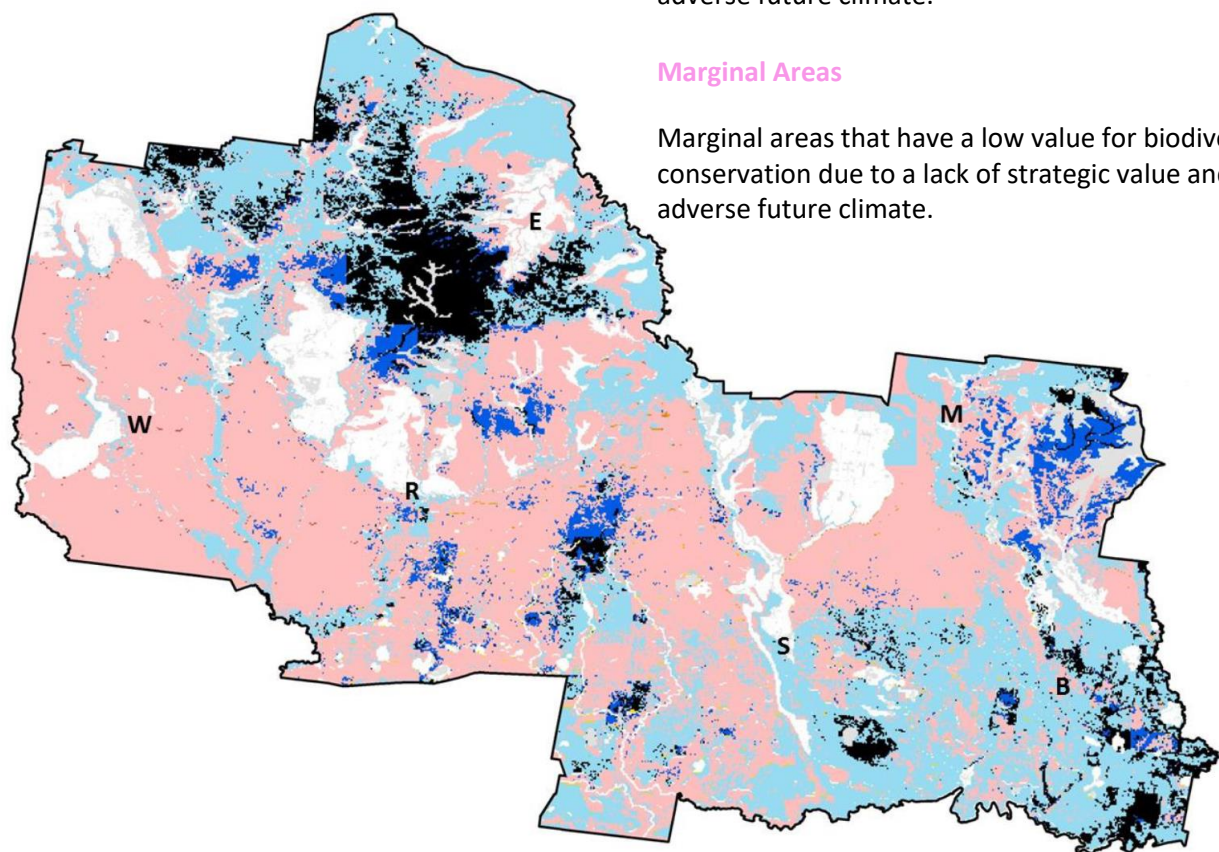
Figure 2: Diagram of Biodiversity Strategy. Areas are categorised based on differences in strategic value and climatic conditions in the future (green), and actions to maintain biodiversity are indicated in (blue).
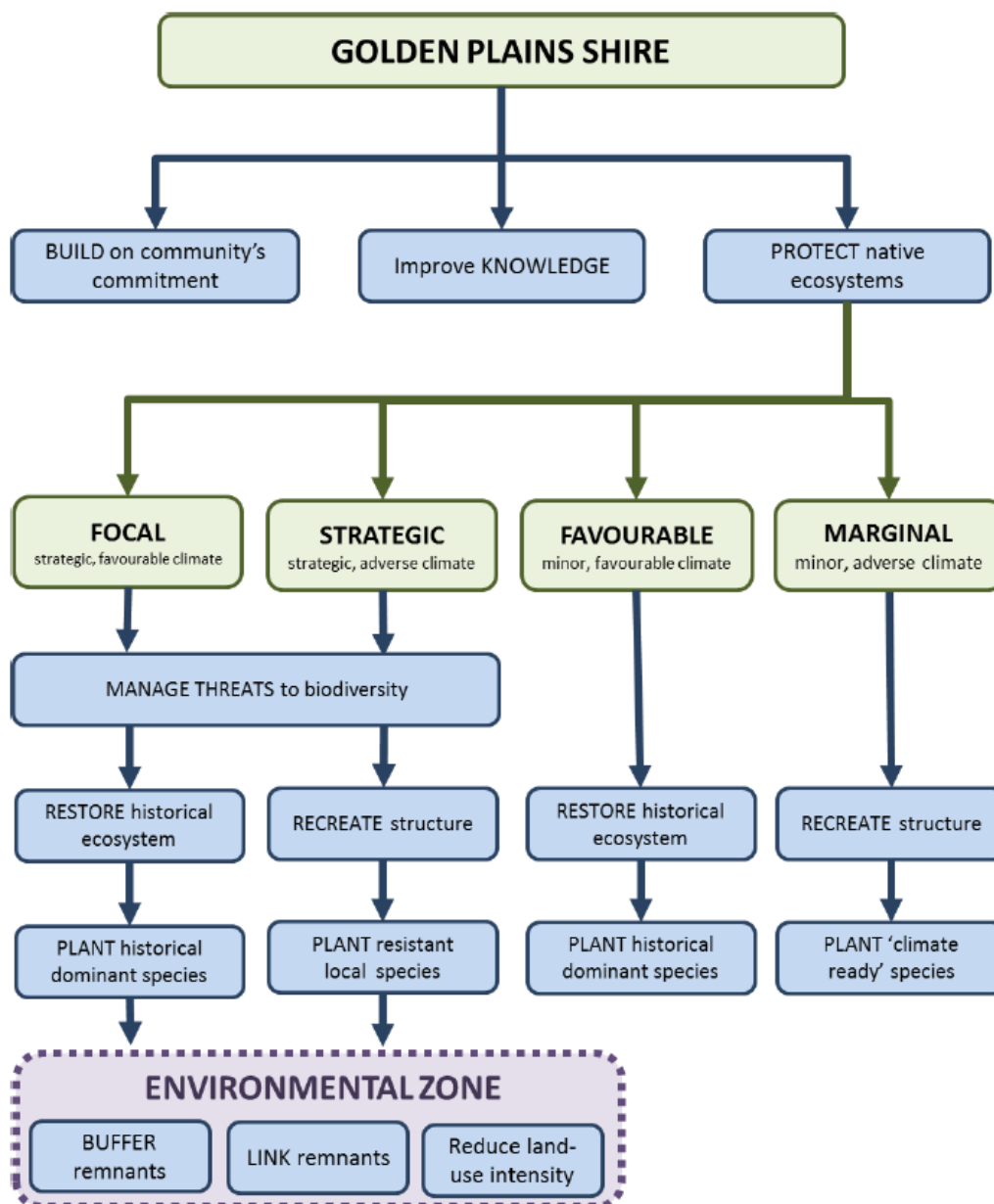
Strategic Areas for Target Ecosystems

Figure 3: Potential areas for the target ecosystems categorised into Focal (black), Strategic (dark blue), Favourable (light blue) and Marginal (pink) areas based on their strategic value for biodiversity conservation and the suitablity of predicted future climate. The towns of Wallinduc (W), Rokewood (R), Enfield (E), Shelford (S), Meredith (M) and Bannockburn (B) are indicated.

Focal Areas

Focal Areas are strategic for biodiversity conservation and are predicted to have a favourable future climate.

Favourable Areas

Favourable areas are predicted to have a favourable future climate but are a low strategic value for biodiversity conservation.

Strategic Areas

Strategic areas that are predicted to have a high strategic value for biodiversity conservation but an adverse future climate.

Marginal Areas

Marginal areas that have a low value for biodiversity conservation due to a lack of strategic value and an adverse future climate.

Biodiversity Strategy 2016 for Target Ecosystems

Figure 4: Native vegetation throughout Golden Plains (green) should be protected from clearance. Environmental Zones (purple) cover large areas of focal and strategic native ecosystems where conservation efforts should be focussed. These zones are connected by habitat linkages (blue). The towns of Wallinduc (W), Rokewood (R), Enfield (E), Shelford (S), Meredith (M) and Bannockburn (B) are indicated.

Native Vegetation (green)

Protect native vegetation from unnecessary clearance across the Shire.

Consider establishing *Vegetation Protection Overlays* for areas that contain significant vegetation or provide important habitat corridors for native fauna.

Environmental Zones (purple)

Create 'Environmental Zones' around strategic areas where threats to biodiversity are managed and revegetation is used to buffer, extend and link existing remnant vegetation.

'Environmental Zones' are proposed around Focal Areas and Strategic Areas for biodiversity (Figure 4). These areas should be protected from further clearance and developments such as subdivision or urbanisation.

Habitat Linkages (blue)

Connect 'Environmental Zones' by habitat linkages.
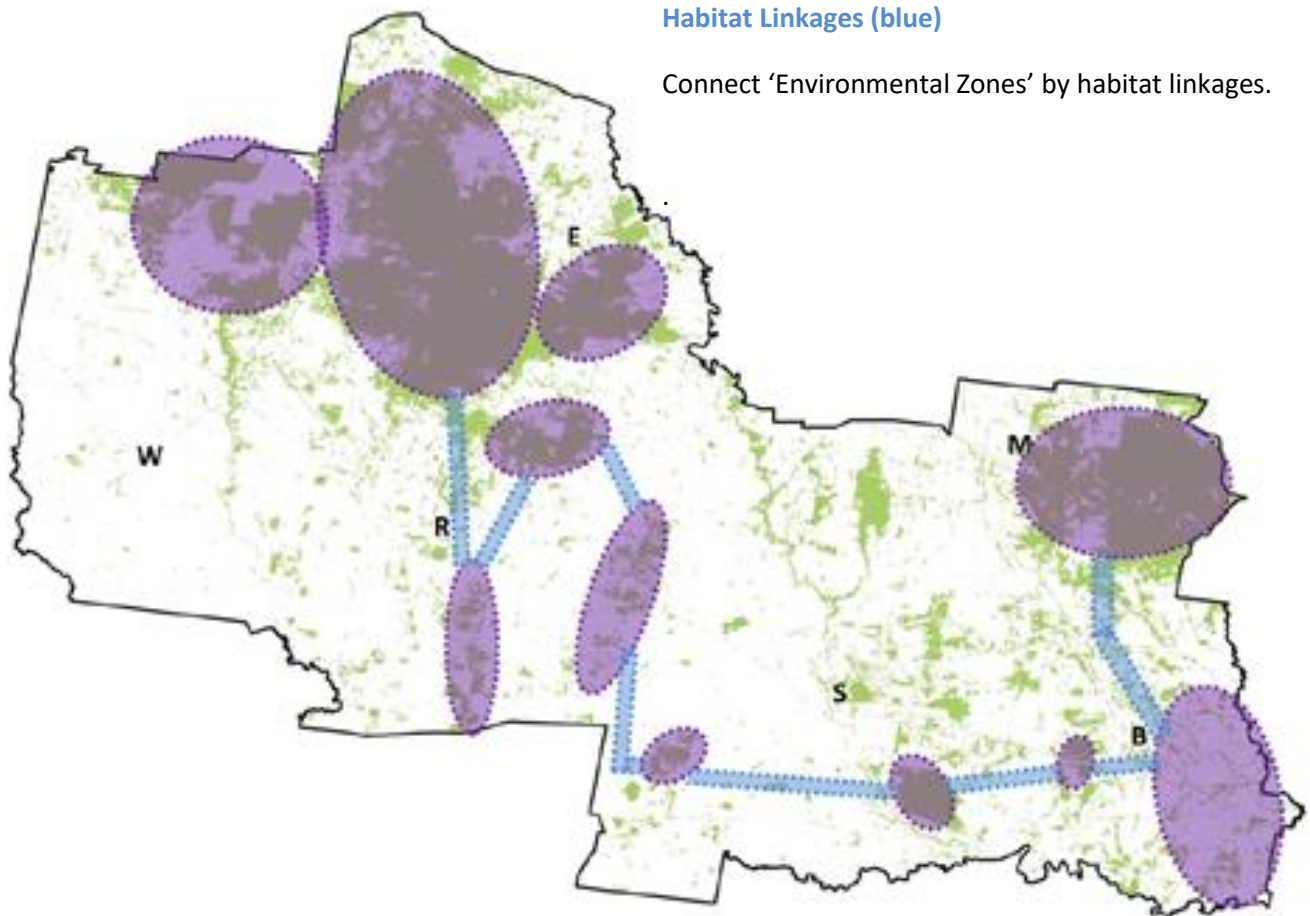
DIRECTIONS FOR PREPARING THE GOLDEN PLAINS SHIRE GROWTH STRATEGY

The Biodiversity Strategy 2016 considered potential outcomes for native vegetation under a range of climate modelling scenarios.

The modelling indicates that much of the Victorian Volcanic Plains are marginal areas or favourable areas with low strategic value. While the climate models indicate possible poor outcomes in these areas, this does not give cause to abandon efforts to protect and enhance the very rare vegetation communities in these areas.

More research and work will be required to verify and clarify the results of the modelling when considering land use change at a local and site by site level.

From a strategic perspective, the Biodiversity Strategy 2016 identifies **Focal Areas** which have the most strategic value for biodiversity conservation due to a favourable future climate. These should be the focus areas for protection from habitat fragmentation and where urban growth is avoided.

Where climate impacts are predicted to diminish the biodiversity value of **Strategic Areas** and their continued value will rely on recreating the ecosystem structure with resistant local species, the strategic direction is to abate habitat fragmentation and recreate the ecosystem that provides a buffer to **Focal Areas** and extends and links existing remnant vegetation.

1. Protect native vegetation from clearance and align Vegetation Protection Overlay maps with native vegetation identified in Green in Figure 4 and NatureKit.

2. Apply Vegetation Protection Overlays for areas that contain significant vegetation or provide important habitat corridors

3. Identify Focal Areas (Figure 3) as having the highest biodiversity conservation value and where clearance and land use change should be avoided.

4. Strategic areas and Environmental Zones (Figures 3 and 4) serve to protect the Focal Areas and their purpose is to recreate an ecosystem that will adapt to climate change and provide links to existing remnant vegetation.

5. Implement the Planning Scheme Review 2022 to apply the Environment Strategy 2019-2027 and Biodiversity Strategy 2016.

REFERENCES

https://www.environment.vic.gov.au/biodiversity/Implementing-Biodiversity-2037

https://planning-schemes.app.planning.vic.gov.au/Golden%20Plains/ordinance

https://www.goldenplains.vic.gov.au/sites/default/files/Golden%20Plains%20Shire%20Environment%20Strategy%202019-2027%20-%20FINAL.pdf

https://static1.squarespace.com/static/59374e666a4963c6df22569f/t/60752508b176856382f1dc6b/1618289949710/BA+Passage+to+the+future+Digital.pdf

https://maps2.biodiversity.vic.gov.au/Html5viewer/index.html?viewer=NatureKit

Golden Plains Biodiversity Strategy, 2016, Deakin, 30 August, 2016.

Golden Plains Planning Scheme Review, 2022

Passage to the future Our vision for change 2019 – 2022, Biolinks Alliance.

Appendix 1:

State and Local Planning Scheme Policy: Biodiversity

Biodiversity is mentioned in the Golden Plains Planning Scheme in the following clauses.

02.03-2 Strategic Directions Environmental and landscape values	Biodiversity The municipality is home to a wealth of flora and fauna, including rare and threatened species and communities, major waterways and freshwater wetlands.
02.03-3 Strategic Directions Environmental risks and amenity	The resultant impacts on biodiversity, agriculture and water resources can have significant negative environmental, social and economic impacts.
11 SETTLEMENT	Identify the location of open space to be retained for recreation, and/or biodiversity protection and/or flood risk reduction purposes guided and directed by regional biodiversity conservation strategies.
11.03-2S PLANNING FOR PLACES Growth areas	Identify the location of open space to be retained for recreation, and/or biodiversity protection and/or flood risk reduction purposes guided and directed by regional biodiversity conservation strategies.
11.03-3S PLANNING FOR PLACES Peri-urban areas	Identify the location of open space to be retained for recreation, and/or biodiversity protection and/or flood risk reduction purposes guided and directed by regional biodiversity conservation strategies.
11.03-3S PLANNING FOR PLACES	Strategies Identify and protect areas that are strategically important for the environment, biodiversity, landscape, open space, water, agriculture, energy, recreation, tourism, environment, cultural heritage, infrastructure, extractive and other natural resources.

Distinctive areas and landscapes	
11.03-6L-01 PLANNING FOR PLACES Bannockburn	Create flora and fauna corridors within open space reserves that incorporate locally indigenous vegetation, where there are identified biodiversity values.
11.03-6L-05 PLANNING FOR PLACES Teesdale	Ensure any proposed rezoning and development within the Teesdale Future Growth Investigation Area considers land supply and demand, biodiversity, constraints including bushfire and flooding, the former Teesdale landfill, roads, drainage, open space and community infrastructure, regardless of land ownership.
12 ENVIRONMENTAL AND LANDSCAPE VALUES	Planning should help to protect the health of ecological systems and the biodiversity they support (including ecosystems, habitats, species and genetic diversity) and conserve areas with identified environmental and landscape values.
12.01-1S BIODIVERSITY Protection of biodiversity	Objective To protect and enhance Victoria's biodiversity.
12.01-2S BIODIVERSITY Native vegetation management	Objective To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.
12.02-1S Marine and coastal environment Protection of the marine and coastal environment	Maintain the natural drainage patterns, water quality and biodiversity in and adjacent to coastal estuaries, wetlands and waterways.
13.02-1S BUSHFIRE	Areas of biodiversity conservation value Ensure settlement growth and development approvals can implement bushfire protection measures without unacceptable biodiversity impacts by discouraging settlement

Bushfire planning	growth and development in bushfire affected areas that are important areas of biodiversity.
16.01-3S RESIDENTIAL DEVELOPMENT Rural residential development	Protecting existing landscape values and environmental qualities such as water quality, native vegetation, biodiversity and habitat.
18.01-3S Land use and transport Sustainable and safe transport	Avoid, minimise and offset harm to the environment by: Protecting biodiversity.
35.03 RURAL ZONES	To protect and enhance the natural resources, biodiversity and landscape and heritage values of the area.
35.03-5 RURAL LIVING ZONE Decision guidelines	The need to protect and enhance the biodiversity of the area, including the need to retain vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.
35.03-5 RURAL ZONES RURAL CONSERVATION ZONE	To protect and enhance natural resources and the biodiversity of the area.
35.06-6 RURAL CONSERVATION ZONE Decision guidelines	Environmental issues An assessment of the likely environmental impact on the biodiversity and in particular the flora and fauna of the area.
SCHEDULE 1 TO CLAUSE 35.06 RURAL CONSERVATION ZONE	NORTH WEST CENTRAL AREA CONSERVATION VALUES The values that this schedule seeks to conserve are: Natural heritage and biodiversity values of the north west central area, particularly significant areas of remnant native vegetation and close proximity to the Enfield State Forest.

SCHEDULE 2 TO CLAUSE 35.06 RURAL CONSERVATION ZONE	BAMGANIE-WOODBOURNE Conservation Values The values that this zone seeks to conserve are; Natural heritage and biodiversity values of the area in particular remnant native vegetation The rural landscape characterised by undulating plains and significant remnant native vegetation and farming activities
SCHEDULE 3 TO CLAUSE 35.06 RURAL CONSERVATION ZONE	SHEOAKS-STEIGLITZ AREA Conservation Values The values that this zone seeks to conserve are; Natural heritage and biodiversity values of the Sheoaks-Steiglitz area including remnant native vegetation on private land The rural landscape is characterised by undulating plains, steeply sloped valleys, the Moorabool River and Sutherlands Creek and significant remnant native vegetation Agriculture is an integral part of the local rural economy and character of the greater region Limited rural living and small scale rural based tourism that is integrated with agricultural and/or natural heritage which protects and enhances the conservation values of the area
35.07-6 FARMING ZONE Decision guidelines	The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.
35.08 RURAL ZONES RURAL ACTIVITY ZONE	To protect and enhance natural resources and the biodiversity of the area.
35.08-5 RURAL ACTIVITY ZONE Decision guidelines	The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.
SCHEDULE 3 TO CLAUSE 42.01 ENVIRONMENTAL SIGNIFICANCE OVERLAY Environmental objective to be achieved	To protect natural environmental processes, maintain biodiversity and protect natural resources of soil, water, flora and fauna.