Hills and Fleurieu trend & condition snapshot

LANDSCAPE SOUTH AUSTRALIA HILLS AND FLEURIEU

Nature

The Hills and Fleurieu region has the most ecologically diverse landscapes in the state. Our species and ecosystems hold intrinsic value, while providing many ecological services to people, communities, and industries.

The prosperity of our region is directly linked to these natural assets. This makes identifying, managing and monitoring the impacts to them a priority. Successfully managing impacts should result in an improvement in these assets in the long term.

N1. Protect and restore our native vegetation and freshwater ecosystems

NATIVE VEGETATION

Indicator	Condition	Trend in health
Native vegetation	Variable	Stable/Declining
Terrestrial ecosystems	Variable	Declining

The native vegetation of our region includes a diverse range of terrestrial, freshwater, coastal and marine species. Native vegetation creates habitat for plants and animals, reduces erosion of soils, coastlines, and waterways, and can improve water quality. Native vegetation also supports agricultural production, for example shelterbelts and paddock trees provide shelter and shade, and diverse native vegetation a reservoir of beneficial insects. It also draws down and stores carbon, while providing a place for people to connect with nature.

Native vegetation in our region is impacted by clearance for urban and agricultural development, grazing pressure, invasive species, altered fire regimes, and climate change.

Analysis of aerial imagery and satellite derived machine learning have been used to estimate the extent of native vegetation cover in the region. Using the average from several data sources, the estimated terrestrial native vegetation cover in the Hills and Fleurieu region is 26%. This estimate will continue to be refined as new data becomes available.

In the Hills and Fleurieu region, only four of the 16 types of landscapes (IBRA environmental associations) have at least 10% of native vegetation protected. This protection includes areas managed by the National Parks and Wildlife Service SA, Forestry SA native forest reserves, Crown land reserves, and Heritage Agreements. The four IBRA environmental associations that have over 10% protection are Deep Creek, Fleurieu, Bob Tiers (Myponga), and Mt Terrible (Montacute).

FRESHWATER ECOSYSTEMS

Indicator	Condition	Trend in health
Freshwater fish & macro-invertebrates	Fair/Poor	Declining

Freshwater ecosystems in our region are diverse, and include waterways, swamps, wetlands, and lakes. Collectively they improve water quality, absorb pollutants, support native flora and fauna, enhance agriculture, and provide a vital resource for human existence. These ecosystems also support cultural, recreational and economic benefits for the broader community.

Freshwater ecosystems are impacted by activities that result in reduced water flow, water quality, and habitat structure. These include urban and agricultural development, extraction for production purposes, trampling, grazing and pugging from stock and other animals, introduced species, and vegetation clearance.

Monitoring suggests that macroinvertebrate and fish communities are generally in better condition in the higher rainfall areas, such as the southern Fleurieu Peninsula and the upper Mount Lofty Ranges, where stream flow patterns better align to the needs of the ecology. Higher amounts of remnant vegetation are often found in these areas and lower levels of human settlements, which is known to have a positive impact on macroinvertebrate community condition in particular. Macroinvertebrate diversity is decreasing in the region, especially in taxa that respond to stream flows, as flows are decreasing and sites that once flowed perennially are transitioning to intermittent flows. The condition of aquatic fauna communities on the drier Eastern Mount Lofty Ranges and plains, particularly the northern catchments, is generally poorer in comparison.

About this document

This is a snapshot of what we know about the nature issues that are the focus of our Hills and Fleurieu Landscape Plan 2021-2026. Follow the links for more detail.

To read the Landscape Plan or snapshots on land, water, climate and community, go to: www.landscape.sa.gov.au/hf

For much of the Mount Lofty Ranges, especially in the upper reaches, Mountain/Obscure Galaxias are the only species of native fish that remain. Mountain/Obscure Galaxias populations have disappeared from some regular monitoring sites and many remaining populations across the region are facing a high risk of localised extinctions. The loss of fish from these sites represents a significant shift in the character of the sites, and is most likely a response to flow regime and water quality impacts.

Refer to the *Water Snapshot* for more information about surface and groundwater quality and aquatic ecosystem health.

Challenges

It would be challenging and expensive to comprehensively monitor all native vegetation across the region to track condition, threats and change. There is no agreed methodology for monitoring vegetation condition at a landscape scale, and the time and expense associated with this task are prohibitive. However, it can be assumed that on average there is a decline in the condition of native vegetation in our region. This is due to growing grazing pressure from kangaroos, weed impacts, inappropriate fire regimes and fragmentation.

There is a substantial amount of information regarding the health of aquatic ecosystems in the region, but programs to collect this information are maintained separately and it takes great effort to collate data to create a whole of region understanding. This lack of knowledge coordination could significantly hamper efforts to sustain these aquatic communities as the climate continues to get hotter and drier, exacerbating existing decreasing trends and poor condition.

N2. Conserve and rehabilitate our coastal, estuarine and marine ecosystems

Coastal areas

Indicator	Condition	Trend in health
Coastal & marine ecosystems	Good	Variable

The Fleurieu coastline is well known for its natural beauty, and is a recreational destination for locals and tourists alike. The diverse landforms include beaches, dunes, cliffs and headlands, all of which support habitat for unique flora and fauna. The offshore islands in our region also provide sanctuaries for seabirds and other wildlife. Many of these coastal areas are culturally significant for First Nations people.

These seascapes are impacted by natural processes such as storm surges, as well as pressures associated with recreational use, introduced species, urban development, and pollution.

The Fleurieu coastline extends for approximately 166km, and a high proportion of the area is under the care and control of regional councils. The majority of the remaining land is under the protection of the Coast Protection Board and the Minister for Environment and Water.

Estuaries

The Hills and Fleurieu topography and unique geology form diverse estuarine environments along our coastline. These areas are dynamic, and change in response to natural processes and human pressures from inland, the coast and the sea.

The Coorong and Murray Mouth is the most well-known estuary in the state and falls within the Hills and Fleurieu region. This natural asset is also well monitored, and has a tiered management program overseen by the Murray-Darling Basin Authority (MDBA). The MDBA calculated that the minimum annual water flow needed to keep the Murray Mouth open is 730 GL. When this is achieved, sand dredging is not required, and the condition of this estuary will improve.

Marine Environments

The marine environments within the Hills and Fleurieu region provide a resource for recreational activities, tourism, and commercial industries. These environments are home to a diversity of animal taxa and unique flora, with complex ecological relationships. Marine environments vary across the region, with regard to the presence of reefs and seagrass meadows.

There are a common suite of pressures impacting on our marine environments, including pollution (treated sewerage, marine debris and stormwater run-off), fertiliser and sediment from land-based activities, population growth and urban development, overfishing, dredging, trawling, mining exploration, pest species, and climate change.

Approximately 75% of the marine environment within the Hills and Fleurieu region is protected as part of the Encounter Marine Park (158,395 Ha). This includes:

- 4 sanctuary zones
- 4 general managed use zones
- 3 habitat protection zones
- 3 restricted access zones.

Seagrass cover is sampled in our region as part of a state-wide monitoring program. Seagrass cover within sampling sites is 55%.

Subtidal reefs are also monitored regularly, and a wealth of time-series data exists for a range of taxa. This shows that most of the reefs in our region are in good condition (condition score ≥ 65).

N3. Recover our threatened species and ecological communities

Threatened species are those with a conservation rating of regionally extinct, critically endangered, endangered, vulnerable, or Near Threatened (equivalent of Rare NPW Act SA) as defined by the International Union for Conservation of Nature. This includes terrestrial, freshwater, coastal and marine species. Threatened species are those which are experiencing decline, have a low population size, restricted geographic distribution, low number of populations, or a combination of all of these things. A Threatened Ecological Community (TEC) has a conservation rating of critically endangered, endangered or vulnerable.

Threatened Fauna

Around a third of terrestrial and freshwater fauna species in the region, and over half our coast and marine species, are endangered (see table below). Appendix 1a provides a list of nationally threatened fauna in the region.

Ecosystem type	*% fauna species threatened*
Terrestrial	33 %
Freshwater	36 %
Coast and Marine	55 %

In addition to the nationally listed threatened birds in Appendix 1a, there is another suite of declining birds that are also of conservation concern and at risk of extinction in the region (Appendix 2). This is because they are at risk of extinction [iii] . The conservation rating of several of these bird species under the EPBC Act is currently under review.

Numerous other woodland bird species are reported to be declining in the Mount Lofty Ranges due to historical vegetation clearance and ongoing threats to habitat quality. However, in most cases these species are still relatively common and abundant in the region, and are not of conservation concern[iii].

If not addressed, the existing pressures on threatened fauna is likely to see on-going decline and local extinction. Only strategic, tailored interventions at the appropriate scale will prevent these consequences.

Threatened Flora

The table below shows a quarter of terrestrial species, 2 in 5 freshwater species, and 16% of coast and marine species are threatened. Appendix 1b provides a list of the nationally threatened terrestrial plants in the region.

Ecosystem type	*% flora species threatened*
Terrestrial	26 %
Freshwater	40 %
Coast and Marine	16 %

Threatened Ecological Communities

An ecological community is a group of native plants, animals and other organisms that naturally occur together and interact in a unique habitat.

Threatened Ecological Communities (TECs) provide habitat for common and threatened flora and fauna species, and the pressures that impact the ecological community can be different to those impacting individual species. In the Hills and Fleurieu region TECs are at risk due to vegetation clearance, weeds, inappropriate fire regimes, herbivore grazing pressure (kangaroos, stock, and pests), plant pathogens (*Phytophthora cinnamomi*), water diversion, and urban development.

There are four nationally listed TECs in the Hills and Fleurieu region (under the *Environment Protection and Biodiversity Conservation Act 1999*):

- Fleurieu Peninsula Swamps
- Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-Eastern Australia
- Peppermint Box (*Eucalyptus odorata*) Grassy Woodlands of South Australia
- Iron-grass Natural Temperate Grassland of South Australia.

Appendix 1a. Nationally threatened terrestrial fauna in the region

Species	Nationally (EPBC) listed	Note
Australasian Bittern*	✓	
Australian Painted Snipe	✓	
Australian Sea-lion	✓	
Bar-tailed Godwit	✓	Edge of core habitat
Bassian Thrush (SA)	✓	
Chestnut-rumped Heathwren (Mt Lofty Ranges)*	✓	
Curlew Sandpiper	✓	Edge of core habitat
Eastern Curlew*	✓	
Fairy Tern	✓	
Flinders Worm-lizard	✓	
Glossy Black-Cockatoo (Kangaroo Island ssp)	✓	Extinct in region
Great Knot	✓	Edge of core habitat
Greater Sand Plover	✓	Edge of core habitat
Grey-headed Flying-fox	✓	
Hooded Plover (eastern)*	✓	
Lesser Sand Plover	✓	Edge of core habitat
Malleefowl*	✓	Edge of range
Murray Hardyhead	✓	
Orange-bellied Parrot*	✓	Seasonal visitor
Plains Wanderer	✓	Irregular visitor
Red Knot	✓	Edge of core habitat
Regent Honeyeater	✓	Extinct in region
Southern Bell Frog	✓	
Southern Brown Bandicoot (SA mainland & KI ssp)	✓	
Southern Emu-wren (Mt Lofty Ranges ssp)	✓	
Spotted Quail-thrush (Mount Lofty Ranges ssp)	✓	Likely extinct in region
Swift Parrot	✓	Irregular seasonal visitor
Yarra Pygmy Perch	✓	

Appendix 1b. Nationally threatened terrestrial flora in the region

Species	Nationally (EPBC) listed
Bayonet Spider-orchid	✓
Blue Top Sun-orchid*	✓
Butterfly Spyridium	✓
Clover Glycine	✓
Coloured Spider-Orchid	✓
Copper Beard-orchid	✓
Fat-leaved Wattle	✓
Fleurieu Leek Orchid*	✓
Hindmarsh Greenhood	✓
Hindmarsh Correa	✓
Kangaroo Island Spider-orchid	✓
Macgillivray Spyridium	✓
Metallic Sun-orchid	✓
Mount Compass Oak Bush	✓
Mount Compass Swamp Gum	✓
Osborn's Eyebright	✓
Pale Leek Orchid	✓
Pink-lip Spider-orchid	✓
Resin Wattle	✓

*These species are an investment priority for the Australian Government for *Outcome 2: By 2023, the trajectory of species targeted under the Threatened Species Strategy, and other EPBC Act priority species, is stabilised or improved.*

Silver Daisy-bush*	✓
Spiral Sun-orchid	✓
Star Sun Orchid	✓
Stiff White Spider-orchid	✓
Toothed Helmet Orchid	✓
White-Beauty Spider-orchid	✓
Yundi Guinea Flower	✓

Appendix 2. Declining birds of conservation concern in the region

Low-rainfall Grassy Woodlands
Brown Treecreeper
Chestnut-rumped Thornbill
Diamond Firetail
Hooded Robin
Jacky Winter
Restless Flycatcher
Southern Whiteface
Heathlands and Swamps (Closed-shrublands)
Beautiful Firetail
Chestnut-rumped Heathwren (Mt Lofty Ranges)
Southern Emu-wren (Mt Lofty Ranges ssp)
Tawny-crowned Honeyeater
Other
Bassian Thrush (Mesic gullies)
Crested Shrike-tit (Moderate rainfall riparian gum woodlands)
Black-chinned Honeyeater (Moderate rainfall gum woodlands on fertile flats)

Rogers, D., 2011. A Landscape Assessment for the Southern Mt Lofty Ranges Landscape. Department of Environment and Natural Resources, Government of South Australia, Ecological Analysis & Monitoring Unit, Science Resource Centre, Client Services.

[i] Rogers, D., 2011. A Landscape Assessment for the Southern Mt Lofty Ranges Landscape. Department of Environment and Natural Resources, Government of South Australia, Ecological Analysis & Monitoring Unit, Science Resource Centre, Client Services.

[ii] Allan JR, Johnson, R. and West, A., 2018. Putting the power in monitoring: Optimising survey design to determine the effectiveness of restoration on woodland birds in the northern and eastern Mount Lofty Ranges, DEWNR Technical note 2018/01, Government of South Australia, through the Department of Environment, Water and Natural Resources, Adelaide

[iii] Gillam, S. and Urban, R., 2014. Regional Species Conservation Assessment Project, Phase 1 Report: Regional Species Status Assessments, Adelaide and Mount Lofty Ranges NRM Region. Department of Environment, Water and Natural Resources, South Australia.