

# South Australian Arid Lands Districts and bioregions



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## SOUTH AUSTRALIAN ARID LANDS districts and bioregions

The SA Arid Lands landscape region is comprised of seven districts, which form the planning units for the Board.

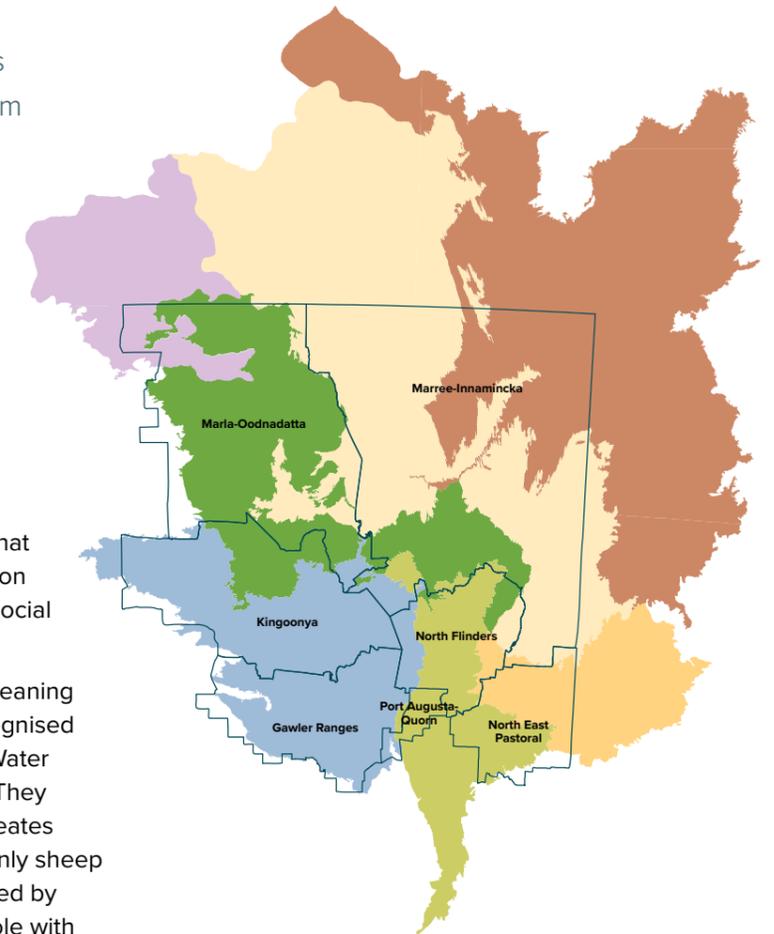
- Marree-Innamincka
- Marla-Oodnadatta
- Kingoonya
- Gawler Ranges
- North East Pastoral
- North Flinders
- Port Augusta-Quorn

These represent socio-economic systems – that is, areas characterised by a unique combination of geographic, demographic, economic and social features.

District boundaries have a long history and meaning for much of our community, having been recognised since the days of the Arid Areas Catchment Water Management and Soil Conservation Boards. They broadly align with the dog fence, which delineates mainly cattle enterprises in the north and mainly sheep enterprises in the south. Districts are supported by Landscape Groups which play a key liaison role with the local community.

The region (and its districts) is also overlaid by seven major bioregions<sup>1</sup>:

- Channel Country
- Stony Plains
- Simpson Strzelecki Dunefields
- Flinders Lofty Block
- Broken Hill Complex
- Gawler
- Finke



### BIOREGIONS:

- are characterised by distinctive interactions of climate, geology, landform, native vegetation and species which have strong influences on land use and management, offer different challenges and opportunities, and respond differently to influences from drivers of change
- are useful units for broad landscape planning.

<sup>1</sup> Small parts of the Great Victoria Desert, Eyre York Block and Murray-Darling Depression overlap relatively small areas within the Marla Oodnadatta, Kingoonya, Gawler Ranges and North East Pastoral districts. Descriptions of these bioregions are not included in this document.

## MARREE-INNAMINCKA DISTRICT

The Marree Innamincka district lies in the north-east corner of South Australia. Table 1 provides a snapshot of some of the district's key geographic and demographic characteristics. More information is available in the *Marree-Innamincka District Plan*.

### LINKED BIOREGIONS

The district is comprised of two major bioregions:

- Channel Country
- Simpson-Strzelecki Dunefields

Smaller areas of four bioregions are also present:

- Stony Plains
- Flinders Block
- Gawler
- Broken Hill Complex



TABLE 1: MARREE-INNAMINCKA SNAPSHOT

<b>Size</b>	203,174 km <sup>2</sup> (39% of SAAL)
<b>Towns (population)<sup>2</sup></b>	Innamincka – 21 (decreased since 2016) Marree – 65 (decreased since 2016) Lyndhurst – 24 (no trend information) Moomba – no permanent residents – fly-in, fly-out only
<b>Aboriginal people</b>	Wangkangurru / Yarluyandi (northern), Yandruwandha / Yawarrawarrka (north-east), Arabana (south-west), Dieri (east), Adnyamathanha (south), Malyankapa (south-east), Kuyani (south)
<b>Land use</b>	Aboriginal land, pastoralism (predominantly cattle), mining, tourism, conservation (public and private lands), energy exploration, service centres, towns, recreation
<b>Catchments and key waterways</b>	Lake Eyre Basin (LEB). Cooper, Kallakoopah, Strzelecki and Warburton Creeks, Georgina and Diamantina Rivers
<b>National Parks, Conservation and Nature Reserves, and Indigenous Co-managed Land</b>	Innamincka Regional Reserve, Malkumba-Coongie Lakes National Park, Strzelecki Regional Reserve – <b>Yandruwandha Yawarrawarrka Parks Advisory Committee</b> ; Munga-Thirri—Simpson Desert National Park; Kalamurina Sanctuary (Australian Wildlife Conservancy); Kati Thanda-Lake Eyre National Park; Lake Torrens National Park, Malkumba-Coongie Lakes National Park; Elliot Price Conservation Park – <b>Arabana Parks Advisory Committee</b> ; Witchelina (Nature Foundation SA)

<sup>2</sup> Towns (population) sizes and trends are obtained from the most recent All persons QuickStats census data for each township from Australian Bureau of Statistics. Accessed on 20 January 2026. [abs.gov.au/census/find-census-data/quickstats](https://abs.gov.au/census/find-census-data/quickstats)

## MARLA-ODDNADATTA DISTRICT

The Marla-Oodnadatta district lies in the north-west corner of South Australia. Table 2 provides a snapshot of some of the district's key geographic and demographic characteristics. More information is available in the *Marla-Oodnadatta District Plan*.

### LINKED BIOREGIONS

The district is comprised of one major bioregion:

- Stony Plains

Smaller areas of four bioregions are also present:

- Simpson-Strzelecki Dune-fields
- Finke
- Great Victoria Desert (predominantly located out of SAAL region, so description not included in this document)
- Gawler



TABLE 2: MARLA OODNADATTA SNAPSHOT

<b>Size</b>	124,508 km <sup>2</sup> (24% of SAAL)
<b>Towns (population)<sup>2</sup></b>	Coober Pedy – 1,566 (decreased since 2016) Marla – 38 (decreased since 2016) Oodnadatta – 102 (decreased since 2016) William Creek – 17 (increased since 2016)
<b>Aboriginal people</b>	Arabana (south-eastern and eastern portion of district), Antakirinja Matu – Yankunytjatjara (western), Wangkangurru/Yarluyandi (north-east), Eringa (northern), Tjayiwara Unmuru (north-west), Irrwanyere Mt Dare (northern), Kuyani (south)
<b>Land use</b>	Aboriginal land, pastoralism (predominantly cattle), mining and energy, tourism, conservation (public and private lands), recreation, service centres, towns
<b>Catchments and key waterways</b>	Lake Eyre Basin (LEB). Neales, Alberga and Finke River systems. Margaret River and Chambers and Warriner Creeks feeding into Lake Eyre (Kati Thanda) South.
<b>National Parks, Conservation and Nature Reserves, and Indigenous Co-managed Land</b>	Witjira National Park – <b>Witjira National Park Co-management Board</b> ; Kan̄ku-Breakaways Conservation Park – <b>Kan̄ku-Breakaways Conservation Park Co-management Board</b> ; Kati Thanda-Lake Eyre National Park (lake portion), Wabma Kadarbu Mound Springs Conservation Park – both <b>Arabana Parks Advisory Committee</b> ; Evelyn Downs (Bush Heritage Australia)

## KINGOONYA DISTRICT

The Kingoonya district lies in the central-west area of South Australia. Table 3 provides a snapshot of some of the district's key geographic and demographic characteristics. More information is available in the *Kingoonya District Plan*.

### LINKED BIOREGIONS

The district is comprised of one major bioregion:

- Gawler

Smaller areas of two bioregions are also present:

- Stony Plains
- Great Victoria Desert (predominantly located out of SAAL region, so description not included in this document)



**TABLE 3: ABOUT THE KINGOONYA DISTRICT – SNAPSHOT**

<b>Size</b>	76,394 km <sup>2</sup> (15% of SAAL)
<b>Towns (population)<sup>2</sup></b>	Roxby Downs – 3,976 (increased since 2016) Andamooka – 262 (decreased since 2016) Woomera – 132 (decreased since 2016) Kingoonya – 13 (no trend available) Glendambo – 77 (no trend available) Tarcoola – 38 (no trend available)
<b>Aboriginal people</b>	Arabana (north-east), Kokatha (south-east), Gawler Ranges (south-west) and Antakirinja Matu – Yankunytjatjara (north-west).
<b>Land use</b>	Pastoralism (predominantly sheep), mining and energy, military, tourism, conservation (public and private lands), recreation, service centres, towns
<b>Catchment and key waterways</b>	Lake Eyre Basin (LEB) and part Lake Torrens catchment. Minor drainage into Lake Gairdner and other salt lakes to south. Very few waterways. Upper portions of Margaret River and Chambers Creek feeding into Lake Eyre (Kati Thanda) South.
<b>National Parks, Conservation and Nature Reserves, and Indigenous Co-managed Land</b>	Part of Lake Gairdner National Park – <b>Lake Gairdner National Park Co-management Board</b> ; part of Lake Torrens National Park; ; Arid Recovery Reserve; Bon Bon Station (Bush Heritage Australia)

## GAWLER RANGES DISTRICT

The Gawler Ranges district is located in the central southwestern area of South Australia. Table 4 provides a snapshot of some of the district's key geographic and demographic characteristics. More information is available in the *Gawler Ranges District Plan*.

### LINKED BIOREGIONS

The district is comprised of one major bioregion:

- Gawler

Smaller areas of two bioregions are also present:

- Great Victoria Desert (predominantly located out of SAAL region, so description not included in this document)
- Eyre Yorke Block (predominantly located out of SAAL region, so description not included in this document)



**TABLE 4: ABOUT THE GAWLER RANGES DISTRICT – SNAPSHOT**

<b>Size</b>	50,017 km <sup>2</sup> (10% of SAAL)
<b>Towns (population)<sup>2</sup></b>	Iron Knob – 110 (decreased since 2016)
<b>Aboriginal people</b>	Kokatha (north-eastern part of district), Gawler Ranges (western), Barngarla (south-eastern), Adnyamathanha (eastern)
<b>Land use</b>	Pastoralism (predominantly sheep), mining and energy, tourism, conservation (public and private lands), recreation, service centres, towns
<b>Catchment and key waterways</b>	Part Lake Torrens catchment. Minor drainage into Lake Gairdner and other salt lakes and towards Spencer Gulf. Very few waterways.
<b>National Parks, Conservation and Nature Reserves, and Indigenous Co-managed Land</b>	Parts of Gawler Ranges National Park – <b>Gawler Ranges National Park Advisory Committee</b> ; part of Lake Gairdner National Park – <b>Lake Gairdner National Park Co-management Board</b> ; part of Lake Torrens National Park, Lake Gilles Conservation Park and Pureba Conservation Park; Hiltaba (Nature Foundation SA)

## NORTH FLINDERS DISTRICT

The North Flinders district is located in the central eastern area of South Australia. Table 5 provides a snapshot of some of the district's key geographic and demographic characteristics. More information is available in the *North Flinders District Plan*.

### LINKED BIOREGIONS

The district is comprised of one major bioregion:

- Flinders Lofty Block

Smaller areas of three bioregions are also present:

- Stony Plains
- Gawler
- Broken Hill Complex



**TABLE 5: ABOUT THE NORTH FLINDERS DISTRICT – SNAPSHOT**

<b>Size</b>	35,543 km <sup>2</sup> (7% of SAAL)
<b>Towns (population)<sup>2</sup></b>	Leigh Creek – 91 (decreased since 2016) Copley – 83 (increased since 2016) Blinman – 43 (increased since 2016) Beltana – 35 (increased since 2016) Parachilna – 16 (no trend information)
<b>Aboriginal people</b>	Adnyamathanha (majority of district), Kokatha (portions of Lake Torrens), Kuyani (portions of Lake Torrens)
<b>Land use</b>	Indigenous Protected Areas, pastoralism (predominantly sheep), mining and energy, tourism, conservation (public and private lands), recreation, service centres, towns.
<b>Catchments and key waterways</b>	Predominantly Lake Torrens and Lake Frome catchments but some linkage to Lower Murray and Willochra Creek. Numerous ephemeral creeks and waterways. Several permanent springs and waterholes in Ranges.
<b>National Parks, Conservation and Nature Reserves, and Indigenous Co-managed Land and Protected Areas</b>	Ikara-Flinders Ranges National Park – <b>Ikara-Flinders Ranges National Park Co-management Board</b> ; Vulkathunha Gammon Ranges National Park – <b>Vulkathunha-Gammon Ranges National Park Co-management Board</b> ; Lake Frome Regional Reserve; part of Lake Torrens National Park; Nantawarrina Indigenous Protected Area; Yappala Indigenous Protected Area

## NORTH EAST PASTORAL DISTRICT

The North East Pastoral district is located in the central eastern area of South Australia. Table 6 provides a snapshot of some of the district's key geographic and demographic characteristics. More information is available in the *North East Pastoral District Plan*.

### LINKED BIOREGIONS

The district is comprised of two major bioregions:

- Flinders Lofty Block
- Broken Hill Complex

A smaller area of one bioregion is also present:

- Murray-Darling Depression. As this bioregion is predominantly located out of the SAAL region, a description is not included in this document. Note, however, that any ground and surface water resources management occurring with SAAL region's portion of the Murray Darling Depression bioregion must be compliant with the Murray Darling Basin Plan, as per the *SAAL NRM Business Plan* (Volume 2).



**TABLE 6: ABOUT THE NORTH EAST PASTORAL DISTRICT – SNAPSHOT**

<b>Size</b>	31,445 km <sup>2</sup> (6% of SAAL)
<b>Towns (population)<sup>2</sup></b>	Yunta – 60 (decreased since 2016) Mannahill – 4 (no trend information) Olary – 4 (stable trend) Cockburn – 12 (decreased since 2016)
<b>Aboriginal people</b>	Adnyamathanha (north-west), Wilyakali (south-east), Ngadjuri (south-west)
<b>Land use</b>	Pastoralism (predominantly sheep), mining and energy, conservation (public and private lands), recreation, service centres, towns
<b>Catchments and key waterways</b>	Water resources are not a particular feature of the North East District. In the range country within the area are fractured rock groundwater aquifers with some spring outlets between Yunta and Olary. For the most part, however, there are very few reliable natural waters. The southern area falls within the Murray Darling catchment.
<b>National Parks and Conservation and Nature Reserves</b>	Bimbowrie Conservation Park; Boolcoomatta (Bush Heritage Australia); Koonamore Vegetation Reserve

## PORT AUGUSTA-QUORN DISTRICT

The Port Augusta-Quorn district is located at the top of the Spencer Gulf and is the transition from the Mid North to the Far North of South Australia. Table 7 provides a snapshot of some of the district's key geographic and demographic characteristics. More information is available in the *Port Augusta Quorn District Plan*.

### LINKED BIOREGIONS

The district is comprised of one major bioregion:

- Flinders Lofty Block

A smaller area of the Gawler bioregion is also present.



TABLE 7: PORT AUGUSTA-QUORN SNAPSHOT

<b>Size</b>	5,380 km <sup>2</sup> (1% of SAAL)
<b>Towns (population)<sup>2</sup></b>	Port Augusta – 13,829 (increased since 2016) Quorn – 1,232 (increased since 2016)
<b>Aboriginal people</b>	Nukunu (along the eastern coast and ranges), Barngarla (along the western coast)
<b>Land use</b>	Grazing, marginal cropping, mining and renewable energy, tourism, horticulture, conservation (public and private lands), recreation, service centres, towns
<b>Catchments and key waterways</b>	Saltia Creek and catchment, Willochra Creek and catchment, salt lakes around Port Augusta including Bird Lake. Minor drainage into the Upper Spencer Gulf. Murray River water is the main water supply for the Port Augusta and Quorn townships, while some rural properties utilise groundwater from bores.
<b>National Parks and Conservation and Nature Reserves</b>	Upper Spencer Gulf Marine Park, Winninowie Conservation Park, Mt Brown Conservation Park, Dutchman's Stern Conservation Park, Buckaringa (Australian Wildlife Conservancy)

## CHANNEL COUNTRY BIOREGION – a snapshot in time

### Quick facts

The Channel Country is located in the far north-east corner of the SA Arid Lands region extending into Queensland, New South Wales and the Northern Territory.

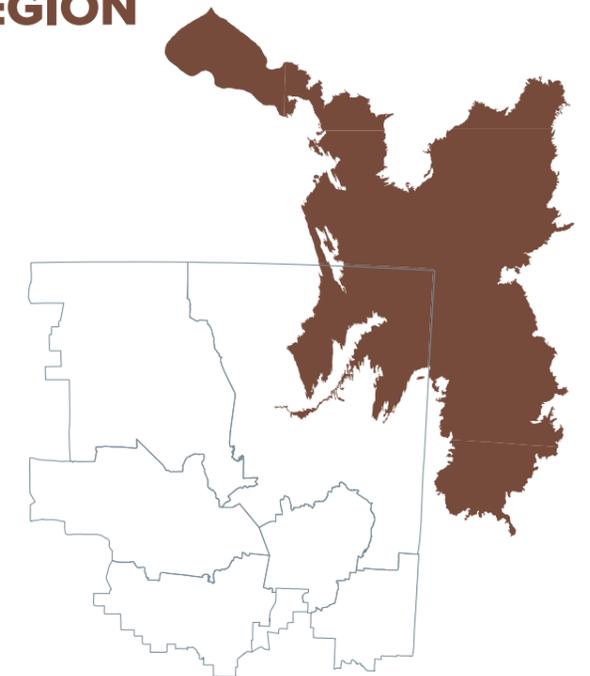
### Associated landscape districts

– Marree-Innamincka district (see p. 4); the Desert Channels region of Queensland; the Western Local Land Services region of New South Wales; Territory NRM region in the Northern Territory

**Size** 51,745 km<sup>2</sup> (10% of SAAL)

**Key waterways** Lake Eyre Basin (LEB): Cooper, Kallakoopah, Strzelecki and Warburton Creeks, Georgina and Diamantina Rivers

**Climate** – arid with very dry, hot summers and short, dry winters. Monthly average temperature ranges between 8-41°C. Rainfall is unpredictable and variable across the bioregion, but generally summer dominant. Average rainfall is 175 mm (1984-current).



### Some<sup>c</sup> of our community values

**SOCIAL** – Innamincka, Mungeranie and Public Access Routes (Warburton Crossing, Walkers Crossing and Mungeranie Bore)

**CULTURAL** – Birdsville Track, Burkes Memorial, Cordillo Downs Woolshed, Elizabeth Symons Nursing Home, Grays Tree, Horse Capstan Pump and Well, Howitts Depot Memorial, Kings Marker, Koonchera Dune, Mona Downs Homestead, Wills grave, ruins (Cadelga Outstation, Clifton Hill, Miranda and Mulka)

**ECONOMIC** – Birdsville Track, Cooper Basin, Innamincka Regional Reserve, Lake Hope, Moomba, The Outback Loop

**ENVIRONMENTAL** – Rivers, creeks, waterholes, swamps, lakes (all), National Parks and Reserves (all), *Acacia pickardii* sites, land systems (Bloodwood, Kunchera and Diamantina), Cordillo Downs, Mungeranie, Sturt Sandy Desert

<sup>c</sup> Values were submitted by some community members in the development of the former NRM Plan – they are not representative of priority or importance and may omit locations that other community members value.

**How the Channel Country system looks and operates...**

Two rich picture maps (Figure 4) highlight how environmental, cultural, social and economic aspects of the Channel Country system interact and respond to the episodic, irregular, extreme boom and bust periods that are a feature of the SAAL region. Normal seasonal influences trigger a similar response generally of less magnitude, but also highly variable.

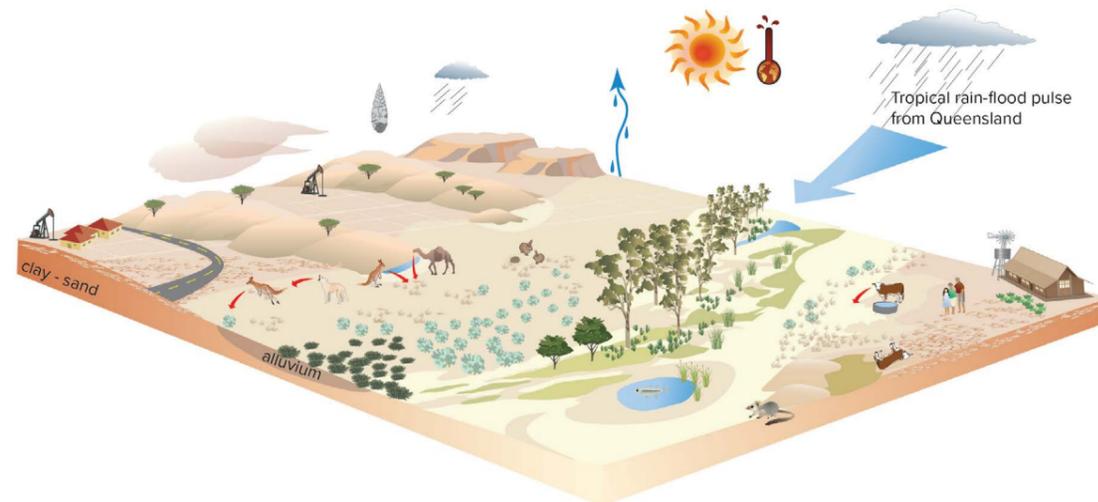
It can be seen in Figure 4 that Channel Country features extensive drainage systems, braided channels, vast floodplains and terminal lakes, with highly variable flow patterns, inundation frequency, salinity and vegetation communities. Gibber plains, low hills and mesas, and vegetated, relatively stable, high sand dunes with swale wetlands

separate the major drainage basins/channels. This bioregion contains several nationally important wetlands (eg Coongie Lakes Ramsar, Goyder Lagoon) which offer key habitat for waterbirds and other biodiversity.

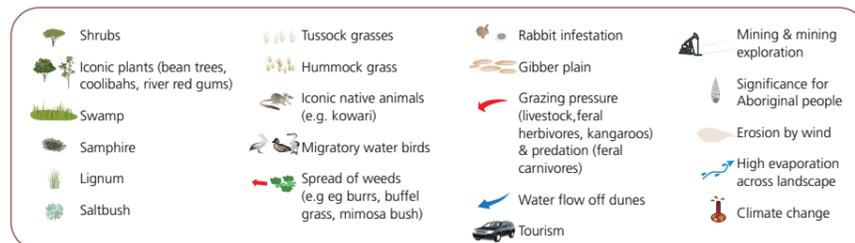
**Boom – (unpredictable)**



**Bust**



**FIGURE 4: Channel Country characteristics during extreme boom and bust periods**



**...in boom periods** Local and/or interstate rainfall fills the extensive network of main channels (eg Cooper Creek, Diamantina River), waterholes (eg Goyder Lagoon), and wetlands on the floodplains and between dunes. This brings an influx of nutrients, triggering germination and a burst of fresh growth in native vegetation (eg tussock grasses, saltbush, lignum and cane grass) and invasive weeds (eg Mimosa Bush, Noogoora Burr and Buffel Grass). Populations of native and non-native, aquatic and terrestrial animals (fish, frogs, birds, livestock, camels, rabbits and pigs) can significantly increase, and migratory birds, flock to the area, taking advantage of the resource-rich conditions to breed. Tourism and stock mustering activity signifies a generally higher level of economic activity associated with boom times.

**...in bust periods** The system is less productive. Vegetation cover has decreased overall and the remaining perennial vegetation may be well-browsed. Animal populations have declined and withdrawn to landscape refugia from which they can rapidly re-colonise when conditions are suitable. Higher temperatures increase evapotranspiration, drying out vegetation, waterways and soils. Reduced vegetation cover combined with high winds characteristic of the region can lead to wind erosion and dust storms. Tourism and mustering activity has declined, indicating the generally lower levels of economic activity associated with drier conditions.

**Examples of change – challenges and opportunities**

There are a number of processes driving change in the Channel Country system that may bring positive and negative changes to the features of this system – economic, social, cultural and environmental – that we value.

For example, while local rainfall contributes to local productivity, a full boom period in the South Australian Channel Country relies on monsoon rain falling high up the Queensland portion of the vast inland catchment of the Lake Eyre Basin (LEB). This is a highly unpredictable, episodic process, strongly influenced by local, interstate, national and global climatic influences.

Historically it is also a highly active water and wind erosion area.

Climate change will therefore have special implications here. Local temperatures are projected to increase along with evapotranspiration, while local and upstream rainfall is likely to be increasingly variable, with longer periods of below average rainfall punctuated by above average, intense rainfall events. These factors will strongly influence this already highly variable system, necessitating adaptation by land managers and native animals and plants.

This will also have implications for the values our community identified. Tourism, oil and gas exploration and cattle enterprises will all need to be highly adaptive, flexible and responsive to favourable times to endure. The role of local permanent waterholes (refugia) will also be central in sustaining aquatic, and associated riparian ecosystems for potentially longer periods of time, making it particularly important to maintain the current connectivity, persistence and water quality of aquatic systems so that the natural environment has the capacity to cope and adapt over time to the new conditions.

There are other drivers at play too, which can further exacerbate the climate change driver influences.

During extended dry times, the system's plants and animals are more vulnerable to competition by unmanaged feral and domestic animals. For example, the concentration of animals within the vicinity of watered areas can lead to over-grazing, trampling and compaction by hard hooved animals, and a decrease in water quality. The recent arrival of Sleepy Cod into this system from upstream also has potential to highly impact local native species, particularly during dry times, and may affect the viability of the Mulka fishery if its range expands to the lower Cooper.

Changes in water management, such as an increase in water capture occurring upstream arising potentially as a result of the repeal of the Wild Rivers legislation, or over extraction of groundwater by industry (eg mining, pastoral) from aquifers in the upper Cooper catchment, could lead to lowering the local water table and a reduction of bore pressure.

Ongoing monitoring and maintenance of bore infrastructure and licensing of water supply will be key to maintaining a sustainable supply.

Other drivers of change include inappropriate management of weed invasions, such as species which can obstruct watercourses (Mimosa Bush) and change fire regimes (Buffel Grass); or tourism impacts on environmental and cultural features arising from harvesting of firewood, physical damage and rubbish disposal.

In combination, these pressures have a range of influences, such as reducing vegetation cover and/or changing composition from desirable to less palatable species; impacting soil profiles and increasing the risk of wind and water erosion. Ultimately, we need to manage the drivers that influence our environment to maintain what we value the Channel Country for – our pastoral industry, permanent waterholes, cultural sites and generally the features of the Channel Country that appeal to travellers.

With challenges come opportunities, however, for communities and industries to be both innovative and sustainable in their practices so that they remain resilient in the face of change.

# STONY PLAINS BIOREGION – a snapshot in time

## Quick facts

Stony Plains extends across the centre and far north-west of the SA Arid Lands region and slightly beyond into the Northern Territory NRM region. Of all the bioregions, the Stony Plains includes the most country on both sides of the Dog Fence.

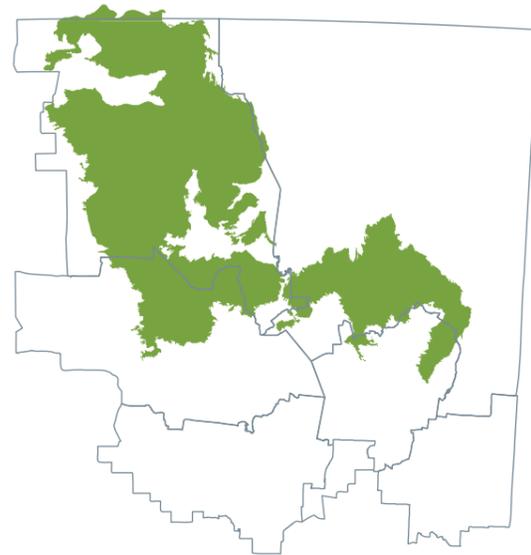
## Associated landscape districts

Primarily Marla-Oodnadatta district (see p. 5) and Marree-Innaminka district (see p. 4); Kingoonya district (see p. 6); North Flinders district (see p. 8).

**Size** 129,240 km<sup>2</sup> (25% of SAAL)

**Key waterways** – Neales River, Peake Creek (also see Simpson-Strzelecki Dunefields, p. 17), Macumba River, Alberga Creek (also see Finke, p. 29)

**Climate** – very arid climate with extreme temperatures. Monthly average temperatures range from 9-42°C. Rainfall is summer dominant and averages between 174mm (north) and 224 mm (south) (1939-current).



## Some<sup>d</sup> of our community values

**SOCIAL** – Public Access Routes, small towns, waterholes, Lake Frome shoreline on 'Plains Block'

**CULTURAL** – creeks, waterholes and springs; historic railway sidings, lines and bridges; historic ruins, woolsheds and repeater towers; pastoral stations; small towns; Finnis Springs Aboriginal Land, Lake Cadibarrawirracanna, Oolgelima Creek, Painted Desert, Painted Hills, Simpson Desert, Stuart Creek Opal Diggings, Kaṅku-Breakaways Conservation Park

**ECONOMIC** – roads, tracks and highways; mining ventures; opal mining; historic railway stations/sidings; small towns; Coward Springs, GAB, GAB springs, Mt Dare, Ghan Railway, Painted Hills, Stuart Creek, Kaṅku-Breakaways Conservation Park, Witjira National Park, Wooltana geothermal exploration licenses

**ENVIRONMENTAL** – Watercourses, springs, lakes, waterholes, rockholes (all), National Parks and Reserves (all), land systems (Arrowie, Breakaways, Paisley), Crispe Bore, Davenport Range, Dickinna Hill area, Finke Floodout, Floodout country, Gregory Overflow, Moon Plain, Painted Desert, Painted Hills, Kaṅku-Breakaways Conservation Park, The Dismal Plain.

## How the Stony Plains system looks and operates...

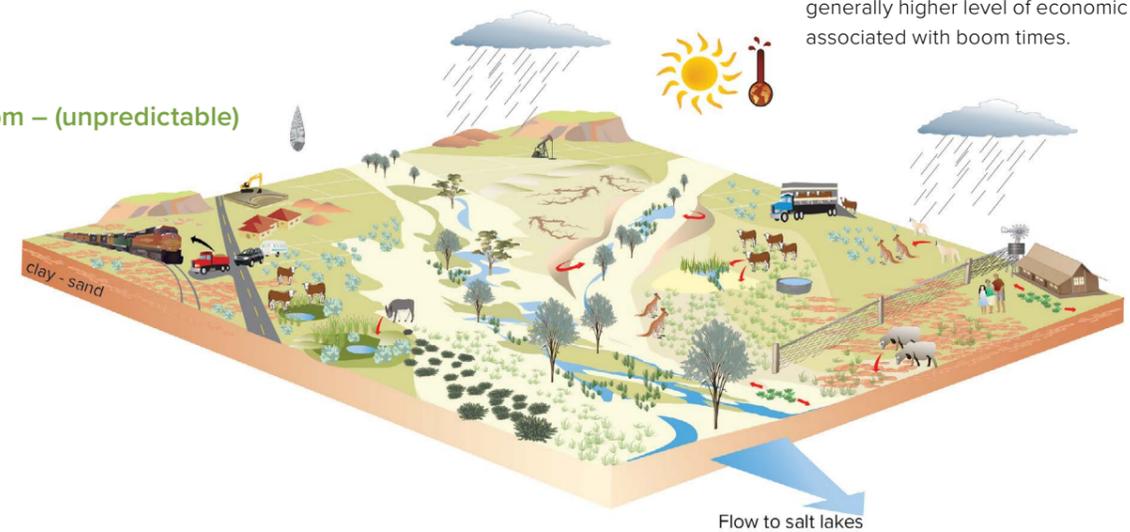
Two rich picture maps (Figure 5) highlight how environmental, cultural, social and economic aspects of the Stony Plains system interact and respond to the episodic, irregular, extreme boom and bust periods that are a feature of the SAAL region. Normal seasonal influences trigger a similar response generally of less magnitude, but also highly variable.

It can be seen in Figure 5 that Stony Plains contain undulating stony and gypsum plains covered with ephemeral species, shrubs and grasslands, with more diverse vegetation on ranges.

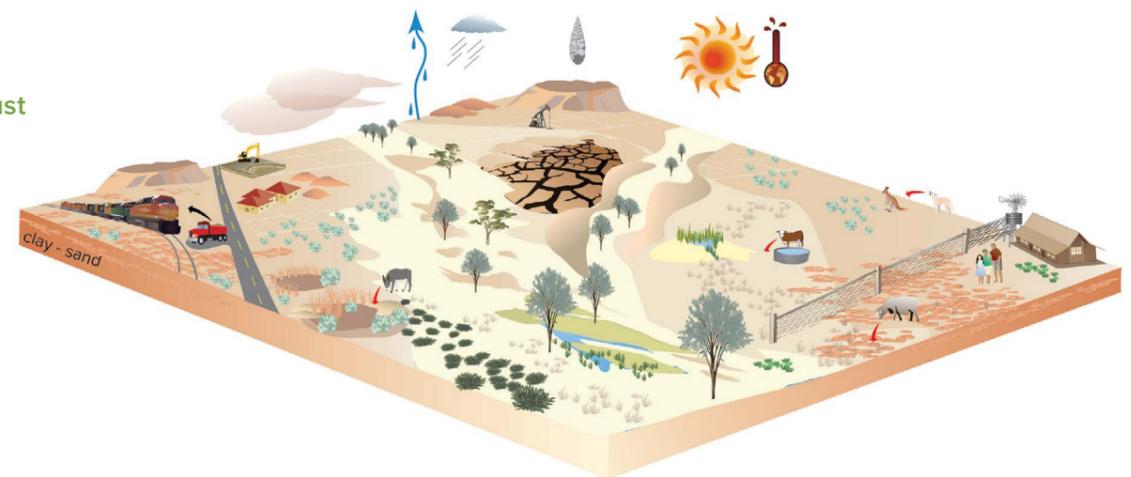
The stony mantles on gibber plains protect soils from wind and water erosion, with grasses responding strongly to rainfall. Heavily eroded ancient plains remain as breakaways, stony hills, mesas and low hills. Swamps, salt lakes, clay pans and salt pans occur in run-on areas; GAB springs and gilgai's are also present. Major creeks flood onto depositional broad clay plains, and semi-permanent waterholes occur where flow is restricted by hills.

**...in 'boom' periods** Higher levels of local and interstate rainfall fill channels and waterholes before flowing towards salt lakes and salt pans, triggering a burst of germination and fresh growth in native vegetation (eg tussock grasses, salt bush, mulgas) and invasive species (eg Buffel Grass, Mimosa Bush). Populations of native and non-native, terrestrial and aquatic animals (native mammals, livestock, donkeys, horses, feral camels, feral goats, wild dogs, cats and foxes) can significantly increase. Tourism and stock mustering activity signifies a generally higher level of economic activity associated with boom times.

## Boom – (unpredictable)



## Bust



**FIGURE 5: Stony Plains during extreme boom and bust periods**



<sup>d</sup> Values were submitted by some community members in the development of the former NRM Plan – they are not representative of priority or importance and may omit locations that other community members value.

...in 'bust' periods The system is less productive. Vegetation has decreased overall with the remaining perennial vegetation possibly well-browsed. Animal populations have declined and withdrawn to landscape refugia (eg permanent waterholes) from which they can rapidly re-colonise when conditions are suitable. Higher temperatures increase evapotranspiration, drying out vegetation, waterways and soils. Reduced vegetation cover, combined with mechanical damage to the stony mantle, can lead to wind erosion and associated dust storms, as well as accelerated water erosion when rain does fall. Tourism and mustering activity has declined, indicating the generally lower levels of economic activity associated with drier conditions.

### Examples of change – challenges and opportunities

There are a number of processes driving change in the Stony Plains system that may bring positive and negative changes to the features of this system – economic, social, cultural and environmental – that we value.

Stony Plains is well-serviced through its network of smaller towns, primarily through the opal mining town of Coober Pedy. This bioregion has well-diversified enterprises such as mining (eg copper-gold, iron, precious stones); pastoral (sheep wool and meat, and cattle); nature-based and cultural tourism (eg The Breakaways, Witjira National Park, Algebuckina), as well as a rich service industry which offers diverse employment opportunities.

This improves the system's ability to respond positively to economic changes such as those driven by fluctuations in price or demand for tourism; iron ore, copper, gold, opal, coal; beef and sheep meat; and wool; or renewable energy sources like geothermal, solar and wind.

This resilience will likely be bolstered further following construction of an improved road north of Coober Pedy, from Marla to the Anangu Pitjantjatjara Yankunytjatjara Lands, which is expected to reduce wear and tear on vehicles; improve access to services; increase visitor numbers; improve economic opportunities and generally improve the overall standard of living in this area. Also, exploration interest in the gas and petroleum reserves of the Arckaringa Basin may further improve the region's economic opportunities. However, associated risks to Aboriginal cultural artefacts and sites, as well as to groundwater and associated surface water aquatic ecosystems, particularly GAB mound springs must be understood and mitigated.

Also, as the mining and pastoral industries both rely on GAB bores; ongoing monitoring and maintenance of bore infrastructure and licensing of water supply will be key to maintaining a sustainable supply.

Associated with this are the bore-fed wetlands in this and other systems which present a complex interaction between economic, social and environmental values as they result from uncontrolled, free-flowing bores, are often highly valued for their recreation amenity and as wildlife refuges but significantly impact other values by reducing nearby artesian and bore pressure, affecting other water users and GAB mound springs, for example (eg North Freeling Springs and Big Blythe).

Similarly, although valued for their economic potential, Date Palms have become an environmental weed (eg Dalhousie Springs) reducing or even ceasing water flow in GAB mound springs, causing significant impacts to water-dependent species.

Also, while increasing nature-based tourism brings significant opportunity it will also require additional infrastructure (eg tracks, serviced camping areas and signage) to avoid impact and maintain the natural, historic and cultural values of sites such as GAB springs, Breakaways, Painted Desert and Witjira National Park. Likewise, at a local level, impacts may be felt through the additional burden on Coober Pedy's desalination plant, which currently produces water at a cost significantly higher than for other areas in Australia.

Climate change is also already a significant driver of change in this system. While Coober Pedy has historically adapted to extreme summer heat by building underground dwellings, other towns are more susceptible to heatwaves. Anecdotal evidence identified Oodnadatta as experiencing power losses during heatwaves. Lack of air conditioning can cause significant stress, particularly on vulnerable community members. To ensure the survival of this town with its historic, social and tourism values, it may need assistance in preparing and adjusting to this change.

Likewise, the semi-permanent and permanent waterholes (eg Algebuckina) of this system are valued for their provision of ecosystem services, such as safe harbour to wildlife and livestock during extended dry times. However, the frequency of waterhole-filling events are likely to decrease through climate change; to ensure they are able to persist as refugia, remaining healthy and connected, this must be considered in future management scenarios.

Changes in rainfall seasonality and volume, increases in temperature and high evapotranspiration rates may also have implications for the emergence of the perennial grasses that underpin pastoral enterprises; the carpets of wildflowers that are a drawcard for tourists; the spread of Buffel Grass and its link to changed fire regimes; and overall increase system vulnerability to droughting and erosion.

## SIMPSON-STRZELECKI DUNEFIELDS BIOREGION – a snapshot in time

### Quick facts

The Simpson Strzelecki Dunefields extends across the centre and north-east of the SA Arid Lands region and beyond into the Northern Territory NRM region.

### Associated landscape districts

Primarily in the Marree-Innamincka district (see p. 4), with smaller areas in the Marla-Oodnadatta (see p. 5), North Flinders (see p. 8) and North East Pastoral (see p. 9) districts.

**Size** 136,822 km<sup>2</sup> (26% of SAAL)

**Key waterway/s** Cooper Creek, Warburton Creek, Strzelecki Creek, Kallakoopah Creek. Lake Eyre Basin. All ephemeral.

**Climate** – very arid climate that includes the driest area of Australia. Monthly average temperature ranges between 8-42°C. Rainfall is unreliable but usually occurs during summer storms. Median rainfall is 125mm (averaged across whole bioregion).



### Some<sup>e</sup> of our community values

**SOCIAL** – Bore track, Public Access Routes (Lake Cadibarrawirracanna, Lake Eyre (Kati Thanda) – Halligan Bay, Lake Eyre – Level Post Bay), Montecollina Bore and wetland

**CULTURAL** – Boorthanna Siding ruins, Box Creek Siding, Killalpaninna Mission, Lake Eyre North, Kati Thanda-Lake Eyre National Park, Lake Eyre (Kati Thanda) South, Lake Frome, Neales River System, Oasis Bore, Tinga Tingana Homestead ruin

**ECONOMIC** – GAB BHP Wellfield A, GAB BHP Wellfield B, Innamincka area geothermal exploration licenses, Kati Thanda-Lake Eyre National Park, Lake Frome, Moomba gas pipelines, Oodnadatta Track, Simpson Desert Conservation Park, Simpson Desert Recreational Reserve, Strzelecki Track

**ENVIRONMENTAL** – Watercourses, springs, lakes, waterholes (all), National Parks and Reserves (all), Green Gully, Kalamurina Station, Lake Frome tertiary deposits, Montecollina Bore and wetland, Moppa-Collina Channel, Oasis Bore

<sup>e</sup> Values were submitted by some community members in the development of the former NRM Plan – they are not representative of priority or importance and may omit locations that other community members value.

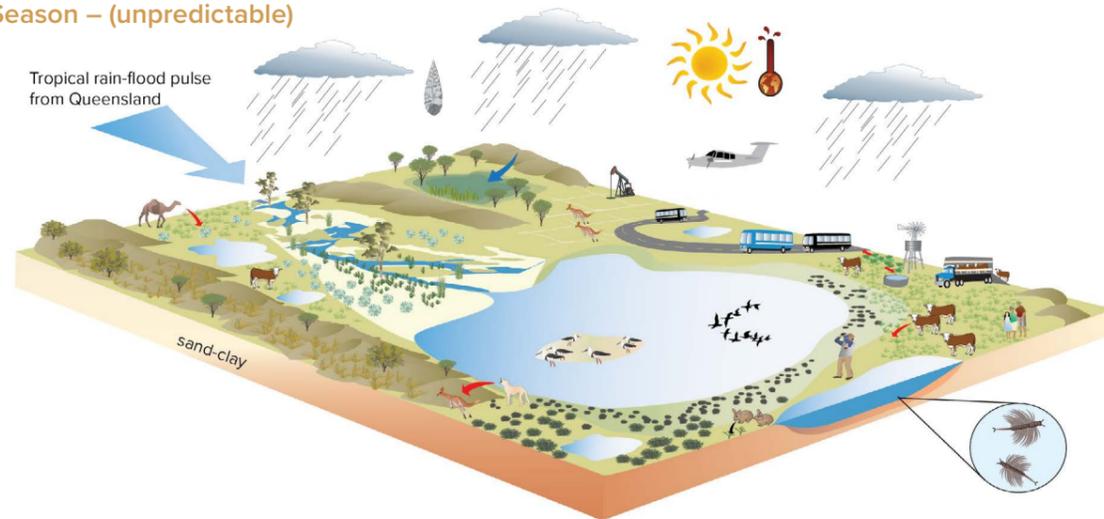
## How the Simpson-Strzelecki Dunefields system looks and operates...

Two rich picture maps (Figure 6) highlight how environmental, cultural, social and economic aspects of the Simpson-Strzelecki Dunefields system interact and respond to the episodic, irregular, extreme boom and bust periods that are a feature of the SAAL region. Normal seasonal influences trigger a similar response generally of less magnitude, but also highly variable.

It can be seen in Figure 6 that Simpson-Strzelecki Dunefields feature a complex of relatively high, parallel sand dunes, interspersed with salt lakes, salt pans, sand drinks and sand plains. This system responds prolifically to rain, which collects in highly productive swale swamps and is a key factor in determining which plants and animals are present.

...in boom periods High volumes of water falling as local and interstate rainfall (Queensland and Northern Territory) fill channels, waterholes and dune swales, before collecting in salt lakes and salt pans, triggering a burst of germination and fresh growth of native vegetation (eg spinifex hummock grasslands and acacia), particularly in dune swales, as well as weed invasion (eg Mimosa Bush and Buffel Grass).

### Boom Season – (unpredictable)



### Bust Season

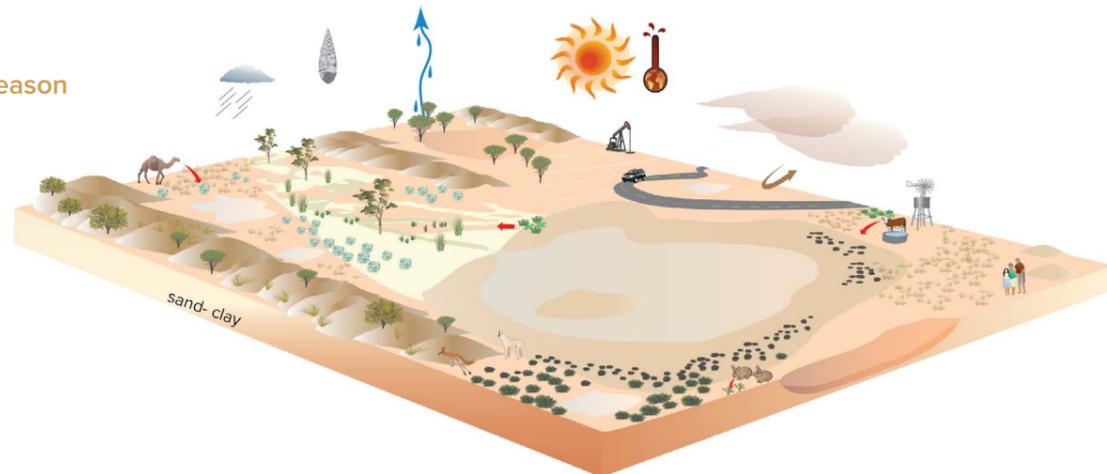
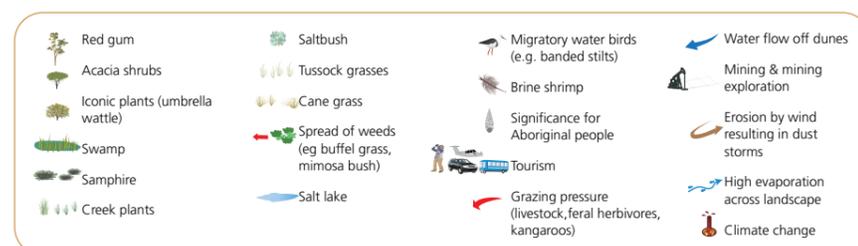


FIGURE 6: Simpson-Strzelecki Dunefields during extreme boom and bust periods



Populations of native and non-native, aquatic and terrestrial animals, including migratory birds, fish, shield shrimp (in salt lakes), livestock, rabbits, feral camels, donkeys, horses, kangaroos and wild dogs can significantly increase. Tourism and stock mustering activity signifies a generally higher level of economic activity associated with boom times.

...in bust periods The system is less productive. Vegetation has decreased overall with the remaining perennial vegetation possibly well-browsed. Animal populations have declined and withdrawn to landscape refugia from which they can rapidly re-colonise when conditions are suitable. Higher temperatures increase evapotranspiration, drying out vegetation, waterways and soils. Reduced vegetation cover combined with high winds can severely increase wind erosion and associated dust storms in this bioregion. Tourism and mustering activity has declined, indicating the generally lower levels of economic activity associated with drier conditions.

## Examples of change – challenges and opportunities

There are a number of processes driving change in the Simpson-Strzelecki Dunefields that may bring positive and negative changes to the features of this system – economic, social, cultural and environmental – that we value.

One example of a major economic driver that has implications for this very remote system is the proposed sealing of the Strzelecki Track between Lyndhurst and Innamincka. An historic Aboriginal trade route and a key exploration and stock route, the Strzelecki Track is a significant icon in the SA Arid Lands region, passing through three other bioregions – starting from Flinders Lofty Block, through the Stony Plains and Simpson-Strzelecki, and terminating in the Channel Country.

Like many other unsealed roads in the region, however, the track is frequently closed due to floodouts, leaving the few towns and associated people and services stranded and closed for tourists and freight delivery.

Sealing of the Strzelecki Track is currently in progress in order to improve access to the oil and gas reserves at Moomba. This will safeguard against road closures due to wet weather and flooding, providing an improved access road for local townfolk, pastoralists, tourists and services; reduce transport wear and tear and travel times; increase safety; and reduce transport operating costs.

It is highly likely to also bring benefit to potential expansion of the geothermal energy around Innamincka.

There will be trade-offs, however.

Many people value the track for its links to history and memory, its 'outback experience' and its environmental values; while this is likely to bring benefits, there will also be increased pressure on the environment due to increased numbers of people passing through these systems.

Climate change has implications here too.

The Simpson Strzelecki system relies primarily on local rainfall that is occasionally supplemented by floodwaters driven through its rivers from upstream rainfall in the northwest (Finke bioregion and the Northern Territory), the northeast (Channel Country bioregion and Queensland) and the south-east (Flinders Lofty Block bioregion) towards the vast inland catchment of the Lake Eyre Basin,

a key but unpredictable process that can give rise to a highly productive 'boom' period.

More variable regional rainfall, reductions in winter rainfall (in the southern portion), or reductions in interstate rainfall are highly likely and may impact the persistence, connectivity and water quality of the semi-permanent and permanent waterholes which help sustain aquatic and associated riparian ecosystems. Improving the capacity of the natural environment to cope and adapt over time to new conditions is central to reducing impact to native flora and fauna and pastoral productivity.

A reduction of water in terminal lakes such as Lake Eyre (Kati-Thanda) may also impact the tourism industry, given its popularity with tourists and birdwatchers.

Higher temperatures and extended heat waves associated with climate change will also have likely implications for infrastructure (eg generators, air conditioners) and outdoor work, energy supplies as well as increasing the rate by which water disappears from the landscape through evapotranspiration.

Also, as the gas and petroleum and pastoral industries both rely on GAB bores in this system; ongoing monitoring and maintenance of bore infrastructure and licensing of water supply will be key to maintaining a sustainable supply.

Historically the Simpson Strzelecki has been a highly active wind erosion area and source of continent-wide dust storms.

To reduce the likelihood of increased dust storms, land managers will need the capacity, knowledge and flexibility to respond to loss of vegetation cover by timely reduction of grazing pressure of livestock and feral herbivores.

There will also be implications for the values our community identified including the Simpson Strzelecki's wildlife refuges and conservation reserves (eg Kalamurina Station, Munga-Thirri Simpson Desert National Park, Kati-Thanda Lake Eyre National Park), social and recreation locations (eg Montecollina Bore and wetland), cultural locations (eg Kialpaninna Mission, Lake Frome), and the system's two major industries (petroleum and gas and cattle).

# FLINDERS LOFTY BLOCK BIOREGION

## – a snapshot in time

### Quick facts

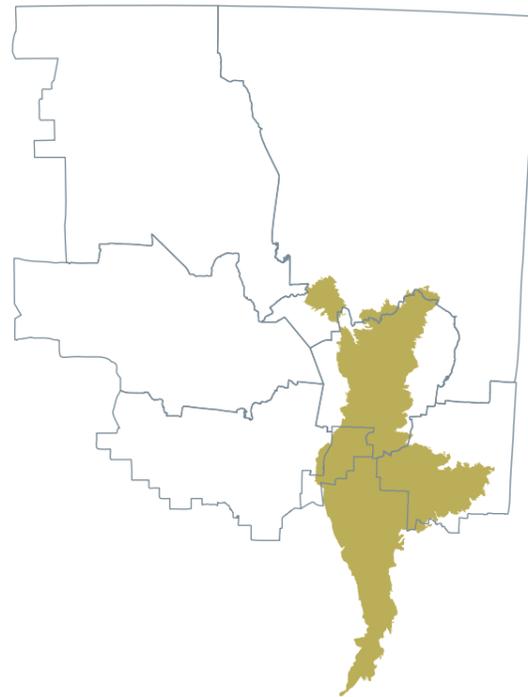
Flinders Lofty block is located in the south east of the SA Arid Lands region extending south beyond our region and into the Northern and Yorke Landscape region in South Australia.

**Associated landscape districts**  
Primarily North Flinders (see p. 8) and North East Pastoral districts (see p. 9); Marree-Innaminka district (see p. 4) and Gawler Ranges district (see p. 7); Northern and Yorke landscape region, Port Augusta-Quorn district (see p. 10)

**Size** 45,329 km<sup>2</sup> (9% of SAAL)

**Key waterways** – Hookina, Brachina and Moralana Creeks

**Climate** –semiarid to arid climate with unreliable and erratic, winter-dominant rainfall. Average temperature ranges between 6-40°C. Median rainfall (1882-current, averaged across entire bioregion) is 295 mm.



### Some of our community values

**SOCIAL** – Small towns, Public Access Routes, pastoral stations, Chambers Gorge, Iga Warta, Moro Gorge, Nepabunna, Nuccaleena Mine PA, Olary, Red Gorge, Beltana, Stirrup Iron land system

**CULTURAL** – Ruins, homesteads, Blinman, Bolla Bollana Smelters, Chambers Gorge, Copley Dam, Moro Gorge, Mount Fitton area, Mt Deception, Mt Rose Mine, Mt Serle Station, Nantiwarrina IPA, Nuccaleena, Paralana Hot Springs, Prism Hill, Radium Hill Mine, Red Gorge, Sacred Rocks, Sliding Rock and Cadnia, goldfields, Vulkathunha-Gammon Ranges National Park Cultural Use Zone

**ECONOMIC** – Small towns, roads, pastoral stations, Arkaroola, Aroona Dam, Chambers Gorge, Iga Warta, Nepabunna, Olary Ranges, Beverley uranium mine, Teetulpa goldfield, Wilpena Pound, Wilpena Resort, Sacred Rocks, Heysen Trail

**ENVIRONMENTAL** – Creeks, rivers, rockholes and springs; significant plant communities; land systems, gorges, stations; National Parks and Reserves; Arcoona Bluff, Arkaroola, Aroona Dam, Blue Wren Fissure, Bunyip Chasm, Dutchman's Stern foothills, Flinders Ranges, Gammon Plateau, Mt Gee, Mt Painter, Nantawarrina IPA, Olary Ranges, Pinda Springs, Razorback Ridge, The Armchair, The Skull, Wilpena Pound

### How the Flinders Lofty Block system looks and operates...

Two rich picture maps (Figure 7) highlight how environmental, cultural, social and economic aspects of the Flinders Lofty Block system interact and respond to the episodic, irregular, extreme boom and bust periods that are a feature of the SAAL region. Normal seasonal influences trigger a similar response generally of less magnitude, but also highly variable.

It can be seen in Figure 7 that Flinders Lofty Block features plains, rises, steeper ranges and hills offering a range of habitat supporting a rich diversity of

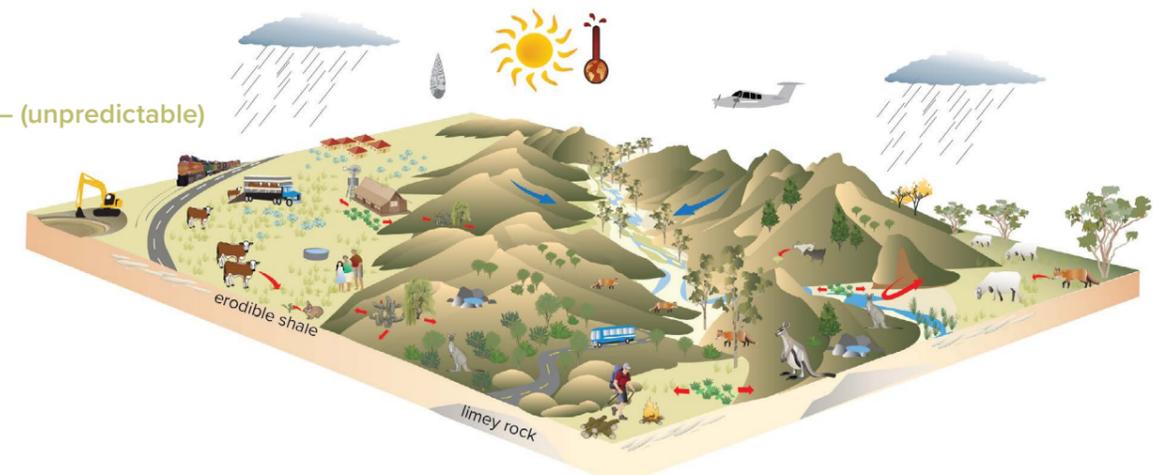
species. Higher elevations result in faster-flowing creeks, with permanent springs associated with fractured sedimentary rock at the bottom of slopes. Rockholes are also present.

**...in 'boom' periods** The system features more water, predominantly from local rainfall which runs off the ranges collecting in waterholes, rockholes and channels which flow out of the region. This triggers a burst of germination and fresh growth of native vegetation (eg chenopods, mallee, tussock grasses) particularly on the lower

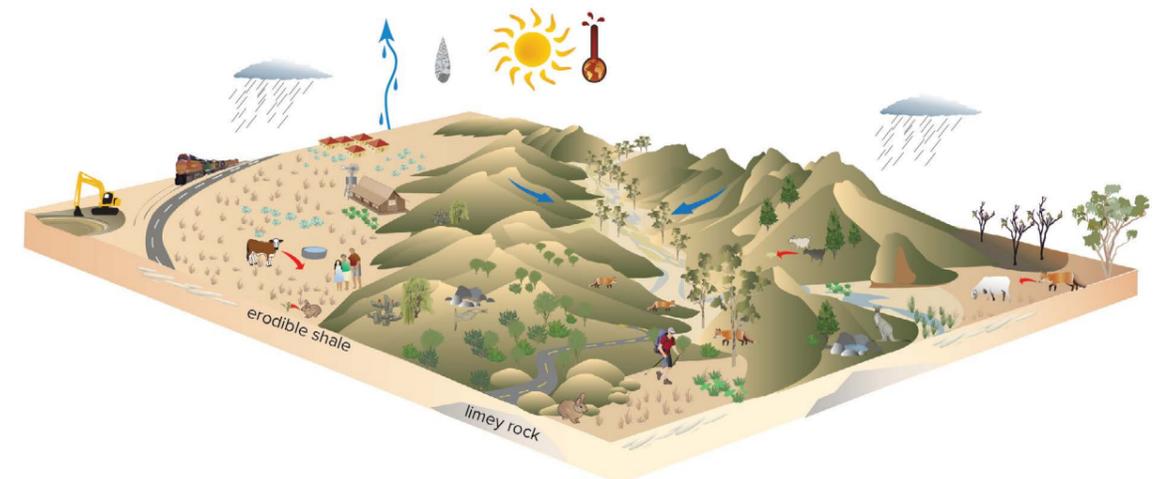
slopes, valleys and riparian areas, as well as weed invasion (eg Cactus, Pepper Tree and Oleander). There are also larger populations of native and non-native, terrestrial and aquatic animals including birds, mammals, livestock, rabbits, kangaroos, feral goats, foxes and wild dogs.

Rainfall run-off from the ranges can cause gully and sheet erosion in the lower slopes and plains, particularly if vegetation cover is insufficient to slow and spread the water across the landscape.

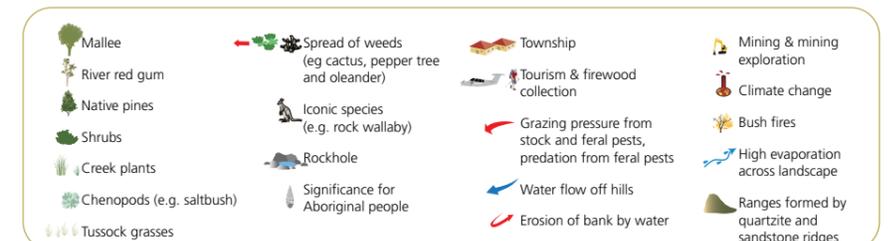
### Boom – (unpredictable)



### Bust



**FIGURE 7: Flinders Lofty Block during extreme boom and bust periods**



<sup>f</sup> Values were submitted by some community members in the development of the former NRM Plan – they are not representative of priority or importance and may omit locations that other community members value.

Tourism and stock mustering activity signifies a generally higher level of economic activity associated with boom times.

**...in 'bust' periods** The system is less productive. Vegetation has decreased overall and the remaining perennial vegetation may be well-browsed. Animal populations have declined and withdrawn to landscape refugia from which they can rapidly re-colonise when conditions are suitable. Higher temperatures increase evapotranspiration, drying out vegetation, waterways and soils.

Tourism and mustering activity has declined, indicating the generally lower levels of economic activity associated with drier conditions.

### What's driving change? Challenges and opportunities for management

There are a number of processes driving change in the Flinders Lofty Block bioregion that may bring positive and negative changes to the features of this system – economic, social, cultural and environmental – that we value.

This system is well-recognised for its rich biodiversity, scenic landscapes, mineral and coal deposits, and numerous parks and reserves. It is relatively populated with many small towns offering services and other employment opportunities, as well as a diverse industry base of tourism; pastoralism (mainly sheep/wool); and mining and exploration which are the origin of many of the social and cultural values that our community identified (eg hiking, fishing, geology, Aboriginal and European historical and cultural sites). However, small towns rely on the local industries that support them, and declines or closures of local industry such as the Port Augusta power station and the Leigh Creek coal mine have significant implications for local residents who must seek new opportunities.

Potential economic opportunities that might be developed further here include renewable energy, like geothermal (current licenses exist at Wootana), solar and wind; organic beef and sheep meat and nature-based tourism.

Already a major economic driver in this region catering to local, national and international tourism markets, nature-based tourism offers the opportunity to diversify and improve economic resilience, particularly during extended dry periods.

There are challenges however.

In reaping economic benefit, the cultural and biodiversity values that our community identified must carefully managed. For example, uncontrolled tourism in sensitive areas of the Flinders Ranges has damaged vegetation through four-wheel drive use and removal of tree branches for firewood, defaced Aboriginal rock art sites, and generally impacted habitat for biodiversity.

Also, early European settlement of this region has left a historical legacy with pest plant (cactus, oleander and Pepper Tree) and pest animal (feral goats, rabbits, foxes and cats) introductions which continue to cause significant competitive pressure to native plants and animals.

Extensive gully erosion and landscape droughting are another legacy of historical management practises, including inappropriate stocking rates, inadequate control of feral herbivores, removal of trees for buildings, firewood and fencing, and inappropriate placement of infrastructure such as railways, roads and buildings interfering with the natural flow of water across the landscape.

More recently, south of the dog fence, wild dogs have been identified as a major cause of the contraction of the sheep industry. Anecdotal evidence indicates that predation on sheep flocks by wild dogs may have been exacerbated in this bioregion due to historical in-breeding with domestic dogs. However, conflicting evidence identifies the wild dog as an apex predator which provides potentially useful ecological and economic benefits in cattle rangelands.

Decreasing returns on wool have led some pastoral properties to alternative breeds (eg Dorper and Damara) produced only for meat. These sheep breeds are less labour intensive than Merinos, which require shearing; they have a higher rate of fecundity and fertility; a high growth rate; and are well-adapted to rangelands.

There are challenges too with anecdotal evidence suggesting that these alternative breeds may bring new management issues associated with risks of inter-breeding with Merino's and contamination of Merino wool crops. There is also some potential for generalist grazing habits to lead to a more rapid onset of overgrazing in some circumstances.

Some land managers have benefitted from feral goats for a supplementary income source during dry seasons but they are also known to degrade many of the landscapes and habitats that we value in this region due to their high fertility and fecundity and browsing habits.

Also, as climate change progresses, declines in winter rainfall may place further pressure on pastoral productivity if it falls below the level required to trigger pasture growth.

Increasing temperatures are also likely to affect the persistence and water quality of springs in this system, impacting cultural values. Tourism numbers may decline and services (eg health, emergency) may also be impacted during hotter, drier weather.

Adjusting to these historical, landscape-scale influences is complex, and will require multi-generational effort over time. With challenges come opportunities, however, for communities and industries to be both innovative and sustainable in their practices so that they remain resilient in the face of change.

## BROKEN HILL COMPLEX BIOREGION – a snapshot in time

### Quick facts

The Broken Hill Complex is located in the south-east of the SA Arid Lands region. The boundaries of this system extend east beyond our region and into New South Wales.

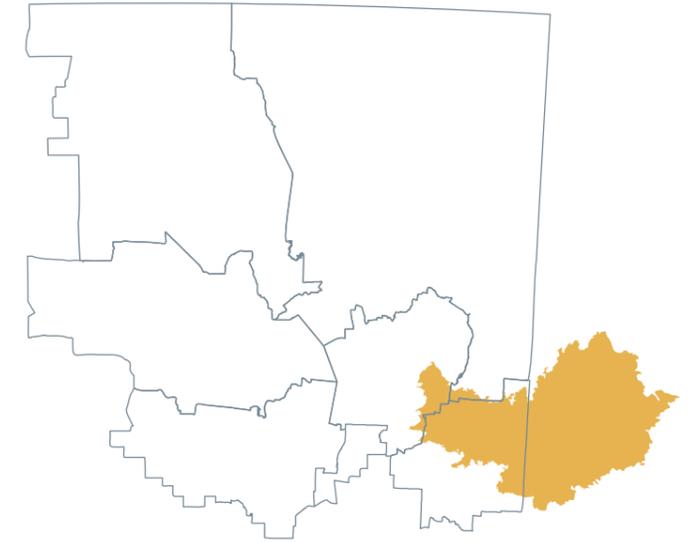
### Associated Landscape districts

Primarily North East Pastoral district (see p. 9); North Flinders district (see p. 8); Marree-Innamincka district (see p. 4); the Western Local Land Services region of New South Wales

**Size** 18,700 km<sup>2</sup> (4% of SAAL)

**Waterways** – no significant permanent waterways

**Climate** – arid with slightly summer-dominant rainfall. Average temperature ranges between 6-35°C. Median rainfall (1890-2005, averaged across entire bioregion) is 174 mm



### Some<sup>g</sup> of our community values

**SOCIAL** – Cockburn

**CULTURAL** – Bimbowrie Woolshed, Erudina Woolshed, Mount Victoria Hut, Old Curnamona Homestead

**ECONOMIC** – Honeymoon mine

**ENVIRONMENTAL** – Creeks, rivers and springs (all), National Parks and Reserves (all), Boolcoomatta Station, ranges and hills, Barrier Range outwash, Bimbowrie subregions, Cinnamon Quail-thrush, Desert Sneezeweed

<sup>g</sup> Values were submitted by some community members in the development of the former NRM Plan – they are not representative of priority or importance and may omit locations that other community members value.

## How the Broken Hill Complex system looks and operates...

Two rich picture maps (Figure 8) highlight how environmental, cultural, social and economic aspects of the Broken Hill Complex system interact and respond to the episodic, irregular, extreme boom and bust periods that are a feature of the SAAL region. Normal seasonal influences trigger a similar response generally of less magnitude, but also highly variable.

It can be seen in Figure 8 that this system features low ranges and hills and extensive alluvial plains and swamps, terminating in clay and salt pans. Water,

sediment and nutrients are transported across this system from higher adjoining ranges of the Flinders Lofty Block to floodplains and swamps, which support herbfields, grasses, and shrubs. Shale dominated hills and granite hills are also a feature.

**...in 'boom' periods** The system features more water, predominantly from local rainfall which runs off the adjoining ranges collecting in waterholes, rockholes and channels which flow out of the region.

This triggers a burst of germination and fresh growth of native vegetation (chenopods, samphire) particularly on the lower slopes, valleys and riparian areas, as well as weed invasion (eg African Boxthorn, Bathurst Burr, Noogoora Burr and cactus).

There are also larger populations of native and non-native, terrestrial and aquatic animals including birds, livestock, rabbits, kangaroos, donkeys, cats, feral goats, foxes and wild dogs.

Rainfall run-off from the ranges can cause gully and sheet erosion in the lower slopes and plains, if sufficient vegetation cover is not present to help slow and spread the water across the landscape.

Tourism and stock mustering activity signifies a generally higher level of economic activity associated with boom times.

**...in 'bust' periods** The system is less productive. Vegetation cover has decreased overall with the remaining perennial vegetation possibly well-browsed. Animal populations have declined and withdrawn to landscape refugia from which they can rapidly re-colonise when conditions improve. Higher temperatures increase evapotranspiration, drying out vegetation, waterways and soils. Fire is common in this system.

Tourism and mustering activity has declined, indicating the generally lower levels of economic activity associated with drier conditions.

## Examples of change – challenges and opportunities

There are a number of processes driving change in the Broken Hill Complex bioregion that may bring positive and negative changes to the features of this system – economic, social, cultural and environmental – that we value.

Climate change, for example, has potential implications for this system.

Summer rainfall is slightly dominant in the Broken Hill Complex and important for supporting the bioregion's natural ecological cycles and pastoral industry.

Any increases in temperatures over summer will increase the rate at which water is removed from the landscape through evapotranspiration. This may reduce water available for triggering pasture plant productivity.

Higher temperatures and evapotranspiration may also result in hotter, more frequent summer fires.

Historical land management practises have also left a legacy for this system with pastoral properties relatively small and developed early in European settlement, including extensive soil erosion, and weeds (Cactus, African Boxthorn, Noogoora Burr and Bathurst Burr) and pest animals (feral goats, foxes, cats, wild dogs) that are well established and competing with native plants, animals and livestock. Feral pigs have also been entering from New South Wales, following rainfall.

More recently, south of the dog fence, wild dogs have been identified as a major cause of the contraction of the sheep industry. Anecdotal evidence indicates that predation on sheep flocks by wild dogs may have been exacerbated in this bioregion due to historical in-breeding with domestic dogs. However, conflicting evidence identifies the wild dog as an apex predator which provides potentially useful ecological and economic benefits in cattle rangelands.

Decreasing returns on wool have led some pastoral properties to alternative breeds (eg Dorper's and Damaras) produced only for meat. These sheep breeds are less labour intensive than Merinos, which require shearing; they have a higher rate of fecundity and fertility; a high growth rate; and are well-adapted to rangelands.

There are challenges too with anecdotal evidence suggesting that these alternative breeds may bring new management issues associated with risks of inter-breeding with Merino and contamination of Merino wool crops. There is also some potential for generalist grazing habits to lead to a more rapid onset of overgrazing in some circumstances.

Some land managers have benefitted from feral goats for a supplementary income source during dry seasons but due to the high fertility, fecundity and browsing habits of goats they are also known to degrade many of the landscapes and habitats that we value in this region, such as the National Parks and Reserves, Curmona and Bimbowrie subregions.

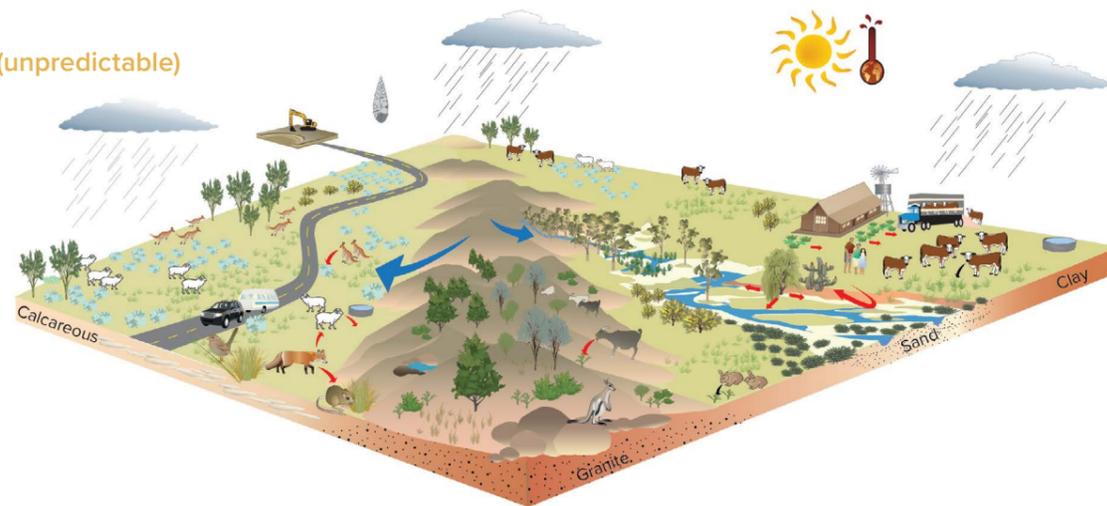
In combination, these factors need to be considered when making property management decisions, particularly during dry times. However, many of these historical, landscape-scale issues are complex and expensive to address, and will require multi-generational effort over time, and effective interstate partnerships. Economic drivers are also bringing about other changes.

The pastoral (cattle, sheep) and mining industry (eg Honeymoon uranium mine) are highly valued as the key contributors to the region's economy. Any changes to these enterprises will have implications for the relatively few, small towns servicing the Broken Hill Complex, such as Yunta and Olary.

Other economic opportunities for the region include renewable energy, such as solar and wind, and organic beef and sheep meat. Also, the cultural history embodied in sites such as Old Curnamona Homestead and woolsheds scattered across the region as well as the unique geology of the Olary Ranges are attractive to tourists and passing traffic as people travel to locations in the eastern states (eg Sydney and Broken Hill) and may offer some additional potential.

It is important to manage any development to ensure that the region's natural resources can support these often competing land uses.

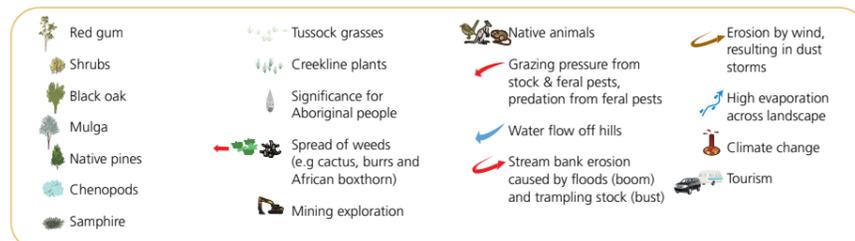
### Boom – (unpredictable)



### Bust



**FIGURE 8: Broken Hill Complex during extreme boom and bust periods**



# GAWLER BIOREGION – a snapshot in time

## Quick facts

Gawler country is located in the south-west of the SA Arid Lands region, extending south beyond our region and into the Eyre Peninsula and Northern & Yorke landscape regions of South Australia.

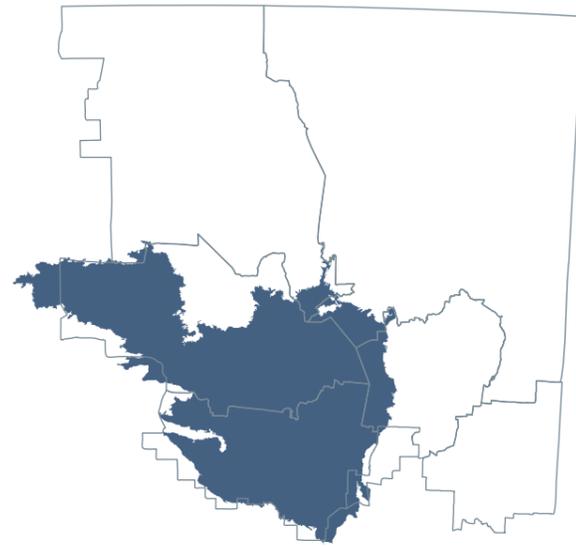
## Associated landscape districts

Primarily Gawler Ranges (see p. 7) and Kingoonya district (see p. 6); Marla Oodnadatta district (see p. 5); Marree-Innamincka district (see p. 4); North Flinders district (see p. 8); Port Augusta-Quorn district (see p. 10).

**Size** 120,688 km<sup>2</sup> (23% of SAAL)

**Key waterways** – no significant permanent waterways

**Climate** – arid climate with predominantly winter rainfall in the south, little seasonality elsewhere. Average temperature ranges between 6-40°C. Median rainfall (1890-2005, averaged across entire bioregion) is 169 mm.



## Some<sup>h</sup> of our community values

**SOCIAL** – Pimba, Woomera, Roxby Downs

**CULTURAL** – Skull Camp Tanks, Tarcoola, Wartaka Outstation

**ECONOMIC** – Gawler Ranges, Gawler Ranges National Park, Iron Duke-Whyalla Railway, Iron Knob Mine, Iron Knob Water Pipeline, Island Lagoon, Lake Torrens geothermal exploration licenses, Lincoln Gap, Lincoln Highway, Middleback Ranges, Mt Ive station, Olympic Dam, Parakylia Station, Roopena, sheep grazing, Tregalana, Woomera Prohibited Area, Roxby Downs, Kokatha area, roads (Iron Knob-Whyalla, Roxby Downs, Peculiar Knob Haul)

**ENVIRONMENTAL** – Watercourses, springs, lakes, waterholes (all), National Parks and Reserves (all), Atriplex kochiana site, Buckleboo granite outcrops, Coralbignie Rocks, Gawler Ranges, groundcover, Kokatha area, Kokatha Hills, Moonabie Range, Oakden Hills, The Organ Pipes, land systems (Centre, Eucaro, Pandurra, Roxby), stations (Bon Bon, Hiltaba, Middleback, Mt Ive, Witchelina)

## How the Gawler system looks and operates...

Two rich picture maps (Figure 9) highlight how environmental, cultural, social and economic aspects of the Gawler system interact and respond to the episodic, irregular, extreme boom and bust periods that are a feature of the SAAL region. Normal seasonal influences trigger a similar response generally of less magnitude, but also highly variable.

It can be seen in Figure 9 that the Gawler bioregion features calcrete plains, gypsum dunefields and ranges, draining into

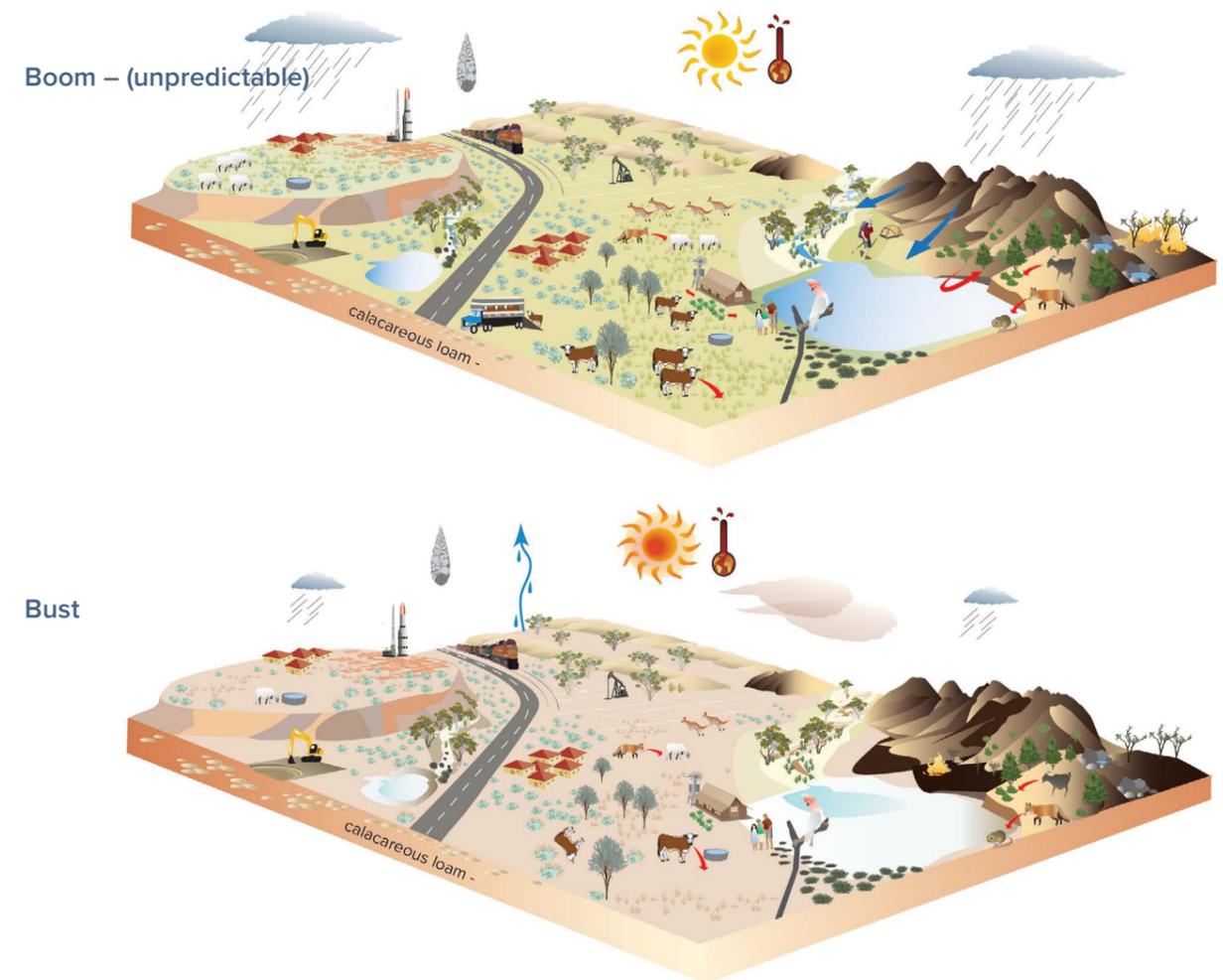
terminal salt lakes. Stony plains occur on elevated plains and tablelands. Rockholes feature in the southern half of the bioregion, with waterholes along drainage lines in the north.

**...in boom periods** The system features more water, predominantly from local rainfall which feeds local rockholes, runs off the ranges and terminates internally in salt lakes and pans. This triggers a burst of germination and fresh growth of native vegetation (chenopods, samphire, tussock

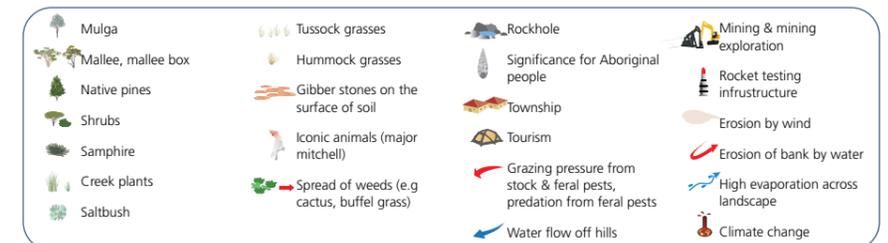
grass) particularly along riparian areas and the plains, as well as weed invasion (eg Buffel Grass and Cactus).

There are also larger populations of native and non-native animals including birds, livestock, feral goats, foxes and wild dogs.

Rainfall run-off from the ranges can cause gully and sheet erosion in the lower slopes and plains if vegetation cover is insufficient to slow and spread the water across the landscape.



**FIGURE 9: Gawler during extreme boom and bust periods**



<sup>h</sup> Values were submitted by some community members in the development of the former NRM Plan – they are not representative of priority or importance and may omit locations that other community members value.

Tourism and stock mustering activity signifies a generally higher level of economic activity associated with boom times.

**...in bust periods** The system is less productive. Vegetation has decreased overall and the remaining perennial vegetation may be well-browsed. Animal populations have declined and withdrawn to landscape refugia from which they can rapidly re-colonise when conditions improve. Higher temperatures increase evapotranspiration, drying out vegetation, waterways and soils. Reduced vegetation cover combined with high winds can lead to wind erosion and associated dust storms. Fire is also common in this system.

Tourism and mustering activity has declined, indicating the generally lower levels of economic activity associated with drier conditions.

### Examples of change – challenges and opportunities

There are a number of processes driving change in the Gawler bioregion that may bring positive and negative changes to the features of this system – economic, social, cultural and environmental – that we value.

A mining town supporting the Olympic Dam copper, gold and uranium venture, Roxby Downs is supported by a local council which offers a wide range of services to the town and local area and provides for a relatively large population of permanent and fly-in, fly-out residents.

The Gawler bioregion therefore has good access to employment opportunities in Roxby Downs and smaller towns and through its relatively well diversified mining (eg Iron Knob mine, Andamooka and Challenger Mine), pastoral (sheep wool and meat, and cattle), environmental and cultural tourism (Gawler Ranges National Park, Ediacara Conservation Park, historic railway sidings) and associated service industries.

As such, its communities are likely to be more resilient to change driven by global commodity price fluctuations, or climate change impacts on specific industries, for example.

The future of Olympic Dam and, to the south, the steelworks in Whyalla combined with the closure of the Port Augusta power station have major implications for employment and services in this bioregion as well as for the wider SA Arid Lands region and South Australian economy.

Climate change is also a significant driver. Climate change projections indicate that winter rainfall is likely to decrease over time; this could be a significant issue for the future sustainability of the pastoral industry, if it falls below the level required to trigger pasture growth.

This is particularly so for the southern parts of the Gawler bioregion where groundwater resources are unsuitable for human and stock use, although they have potential for use by the mining and energy industry.

As well as dams, pastoralists have developed an innovative water collection system around granite rock outcrops for station and stock use but otherwise there is a heavy reliance on local rainfall, particularly in winter, for station supplies.

Economic drivers have also brought about change.

Decreasing returns on wool have led some pastoral properties to alternative breeds (eg Dorper and Damara) produced only for meat. These sheep breeds are less labour intensive than Merinos, which require shearing; they have a higher rate of fecundity and fertility; a high growth rate; and are well-adapted to rangelands.

There are challenges too with anecdotal evidence suggesting that these alternative breeds may bring new management issues associated with risks of inter-breeding with Merino and contamination of Merino wool crops. There is also some potential for generalist grazing habits to lead to a more rapid onset of overgrazing in some circumstances.

With the cultural history, ecology and unique geology of the Gawler Ranges attractive to tourists, tourism offers additional opportunity to the Gawler country along with renewable energy, such as geothermal (eg Lake Torrens) solar and wind, and organic beef and sheep meat.

The area also hosts Department of Defence activity at Cultana Station Training Area and Woomera Prohibited Area (Royal Australian Air Force) which may bring some economic benefit to the region.

It is important to manage any development to ensure these often competing land uses can sustainably co-exist with the full range of community values.

## FINKE BIOREGION – a snapshot in time

### Quick facts

The Finke country is located in the north-west of the SA Arid Lands region. The boundaries of this system extend beyond the region to the north-west in South Australia and into the Northern Territory.

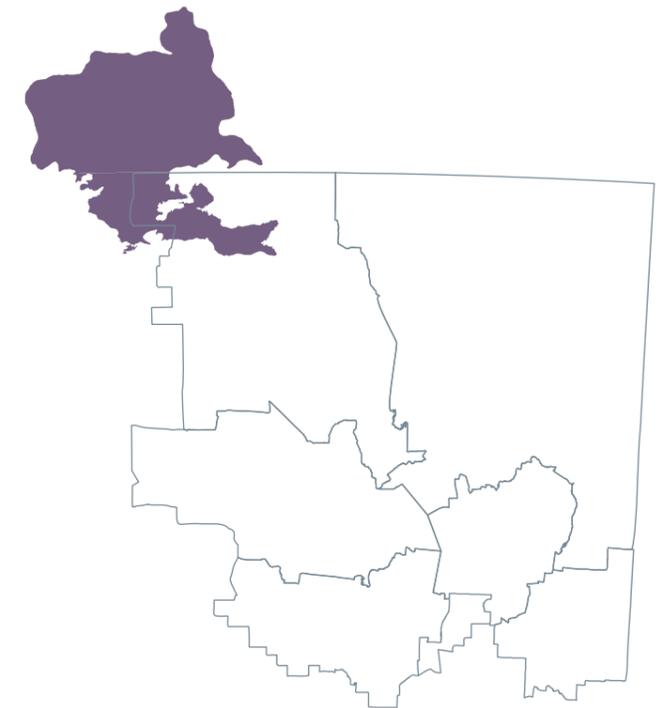
### Associated landscape districts

Marla-Oodnadatta district (see p. 5); Alinytjara Wilurara region in South Australia; and Territory NRM region in Northern Territory

**Size** 13,719 km<sup>2</sup> (3% of SAAL)

**Key waterways** – Alberga River, Hamilton Creek

**Climate** – arid and hot, with very low rainfall and high evaporation. Average temperature ranges between 6-38°C. Median rainfall (2890-2005, averaged across entire region) is 152 mm.



### Some<sup>i</sup> of our community values

**SOCIAL** – GAB (drinking water for town supplies)

**CULTURAL** – Innoina Soakage, Treloar Soakage,

**ECONOMIC** – GAB (stock and mining)

**ENVIRONMENTAL** – Watercourses, springs, lakes, waterholes (all), National Parks and Reserves (all), Moorilyanna land system granite hills near Teyon

<sup>i</sup> Values were submitted by some community members in the development of the former NRM Plan – they are not representative of priority or importance and may omit locations that other community members value.

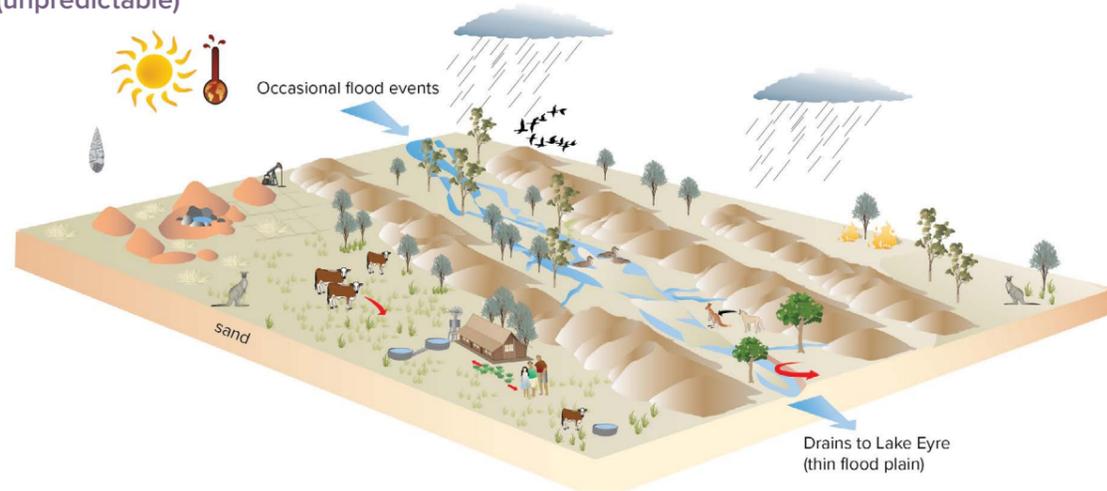
### How the Finke system looks and operates...

Two rich picture maps (Figure 10) highlight how environmental, cultural, social and economic aspects of the Finke system interact and respond to the episodic, irregular, extreme boom and bust periods that are a feature of the SAAL region. Normal seasonal influences trigger a similar response generally of less magnitude, but also highly variable.

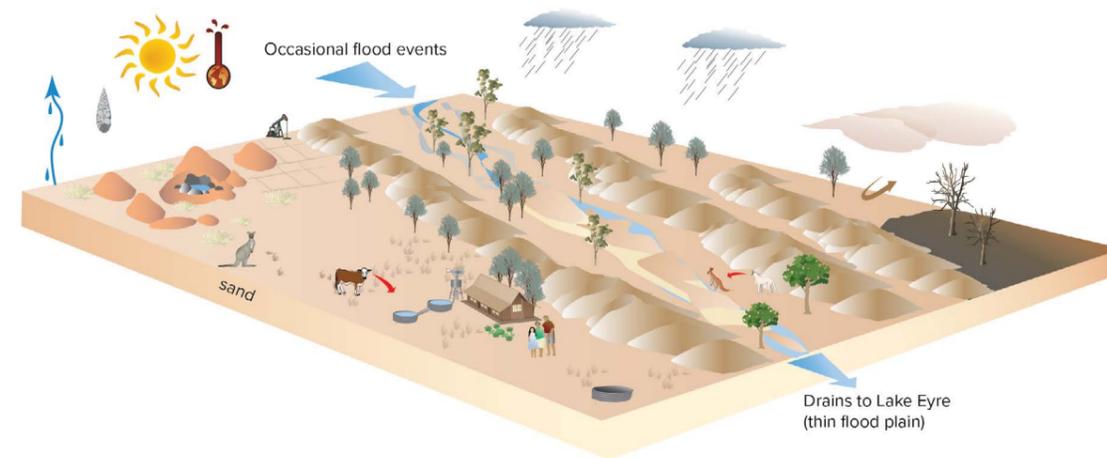
As can be seen in Figure 10, an extensive dune/swale system dominates the Finke, along with sand plains with granitic inselbergs, swale swamps and major drainage lines. Redgum, coolabah and gidgee are common along channels and mulga woodlands are dominant. Waterholes are relatively short-lived. Granitic inselbergs or isolated rocks are a feature.

**...in boom periods** The system features more water, predominantly from local rainfall but also from large flood events fed by upstream rainfall in the Northern Territory. This triggers a burst of germination and fresh growth of native vegetation (spinifex, tussock grass, mulga) particularly along rain run-on areas and sandy plains, as well as minor weed invasion around homesteads and tracks, where there is greater likelihood of the introduction of weed seeds. There are also some rain-fed rockholes present.

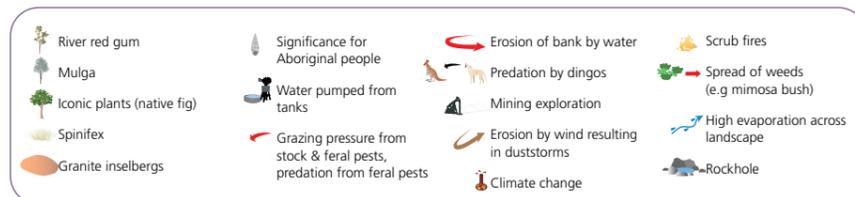
### Boom – (unpredictable)



### Bust



**FIGURE 10: Finke during extreme boom and bust periods**



There are also larger populations of native and non-native animals including birds, livestock (cattle), feral camels, cats and wild dogs.

Tourism and stock mustering activity signifies a generally higher level of economic activity associated with boom times.

**...in bust periods** The system is less productive. Vegetation has decreased overall and the remaining perennial vegetation may be well-browsed. Animal populations have declined and withdrawn to the refuges in the landscape, such as run-on areas, from where they can rapidly recolonise when conditions are suitable. Higher temperatures increase evapotranspiration, drying out vegetation, waterways and soils. Fire is also common in this system.

Tourism and mustering activity has declined, indicating the generally lower levels of economic activity associated with drier conditions.

### Examples of change – challenges and opportunities

While there is still much that is not known about the biophysical characteristics of the Finke system, we do know that there are processes with the potential to drive change to the country. These may bring positive and negative change to the features of the system – economic, social, cultural and environmental – that we value.

For example, the Finke is extremely remote, with no nearby towns offering services and other opportunities to the local population residing on pastoral properties and at mining sites. Residents must instead travel long distances on largely unsealed roads (with the exception of Stuart Highway which passes through this system) which are often closed during wet weather in order to access locations offering only basic and expensive services, and rely on school of the air and flying doctors for basic education and emergency medical services. Living in such remote areas can add significant expense to the cost of living, as well as reducing access to opportunities such as alternative employment, ready markets for business diversification and advanced education.

Climate change will have implications here too.

Any changes in rainfall upstream in the Northern Territory may also vary the frequency and amount of flooding through this system. In turn, this may impact cultural values associated with the Innionna and Treloar soakages, local biodiversity reliant on the safe harbour offered by waterholes; and the profitability of the pastoral industry which relies on the availability of floodplain pasture.

Rainfall north of the Northern Territory border also contributes to local groundwater recharge, so the rate of groundwater accumulation may be impacted affecting the system's industries, communities and biodiversity.

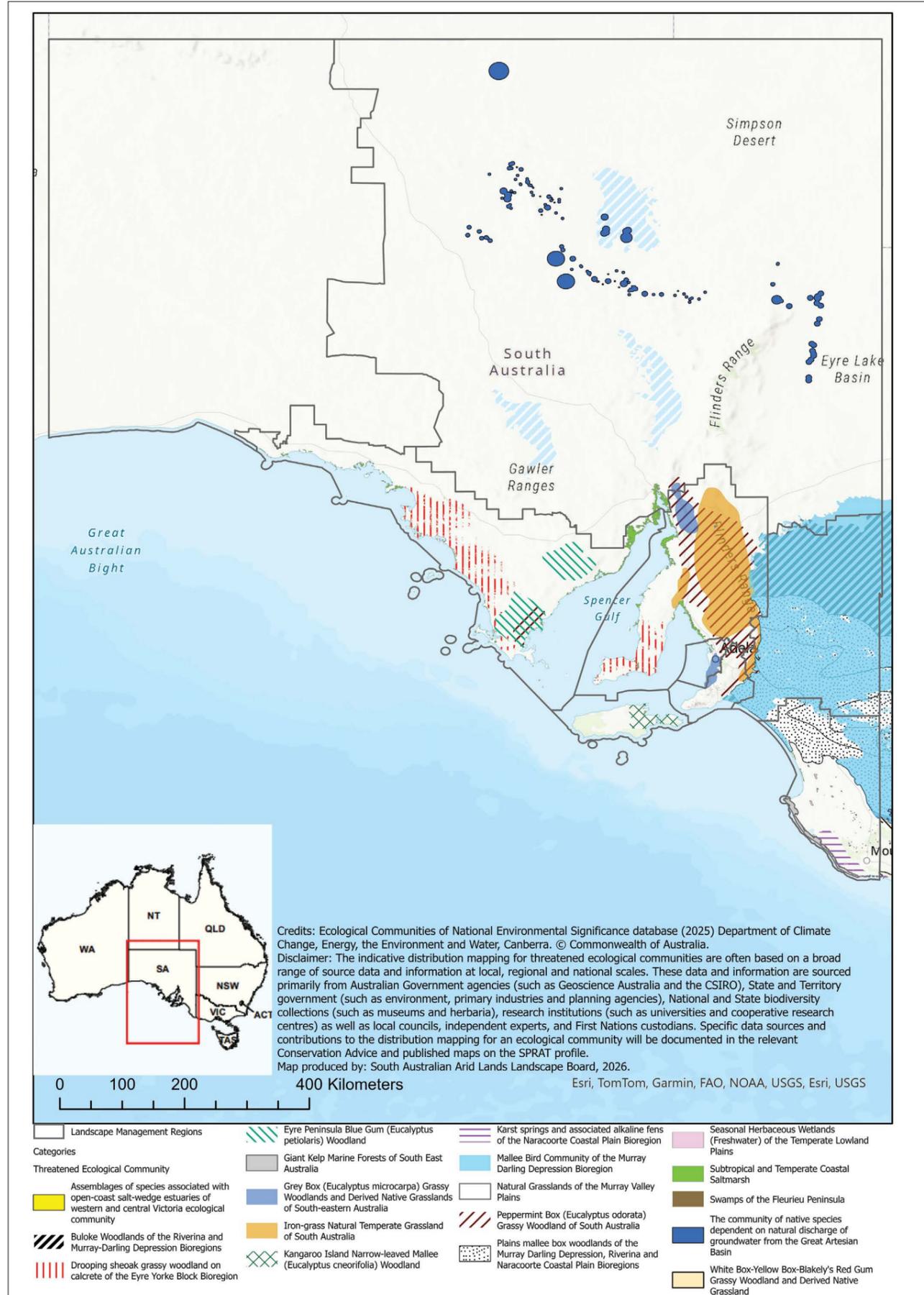
Higher temperatures, particularly during 'bust' periods, will also have likely implications for infrastructure (eg air conditioners) and outdoor work, energy supplies and fire frequency as well as increasing the rate by which water disappears from the landscape through evapotranspiration.

Increased evapotranspiration may lead to reduced vegetation cover; wind erosion; dust storms; and fire frequency and intensity. The Northern Territory also has large infestations of Athel Pine upstream along the Finke River. A 'weed of national significance', Athel Pine forms dense stands along watercourses, reduces water availability for stock and native fauna, concentrates soil salt content, and can change river flow patterns, causing flooding. This would represent a significant land management issue should it enter the region through floodwaters from the Northern Territory.

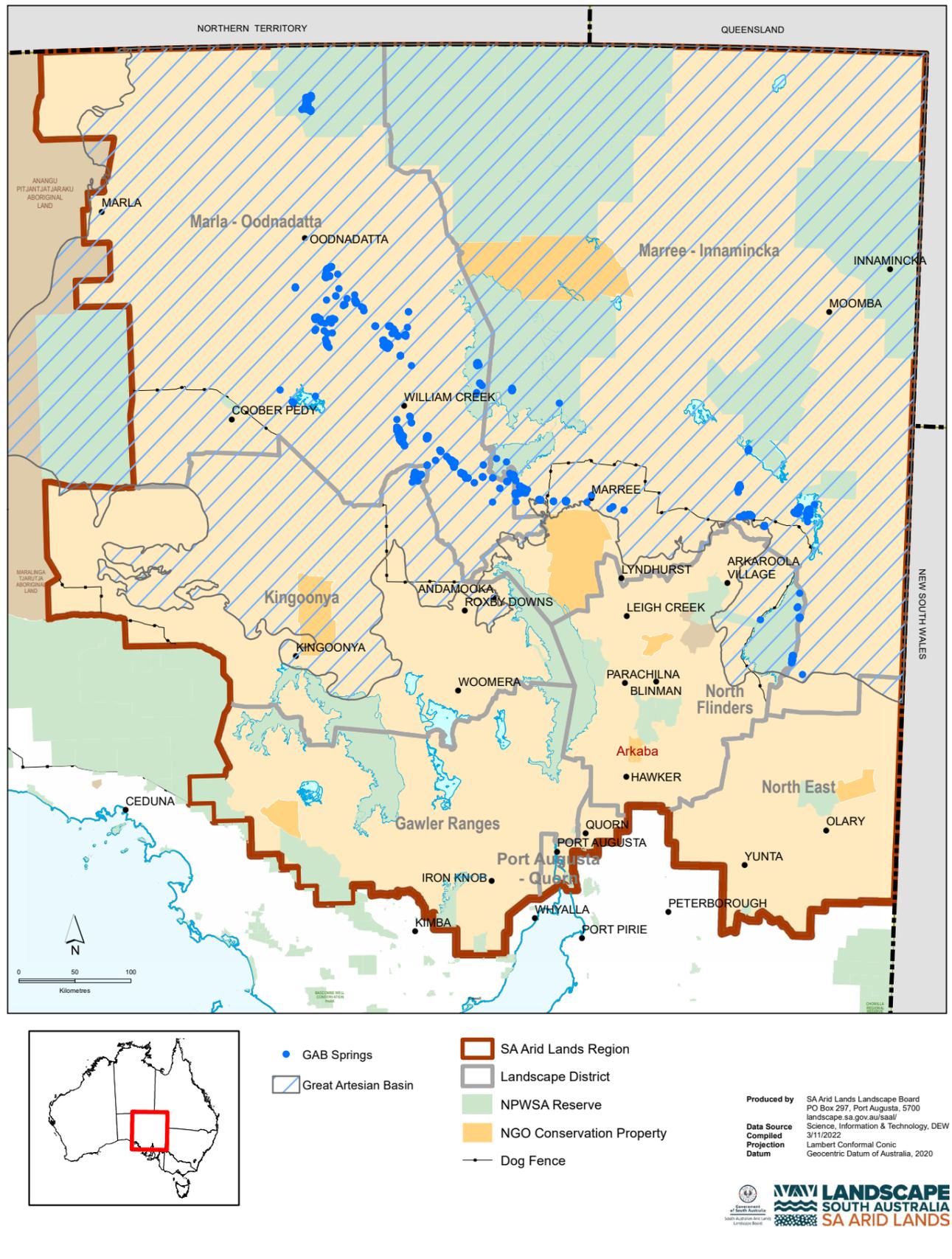
There may be opportunity in this country too.

Exploration interest in the gas and petroleum reserves of the Pedirka Basin – a portion of which underlies the Finke country – and in the development of coal, may bolster the system's economic resilience. Any potential economic benefits will need to be balanced with potential impact to community values, such as Aboriginal cultural artefacts and sites associated with the area; and to the groundwater and associated surface water aquatic ecosystems.

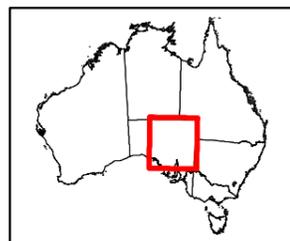
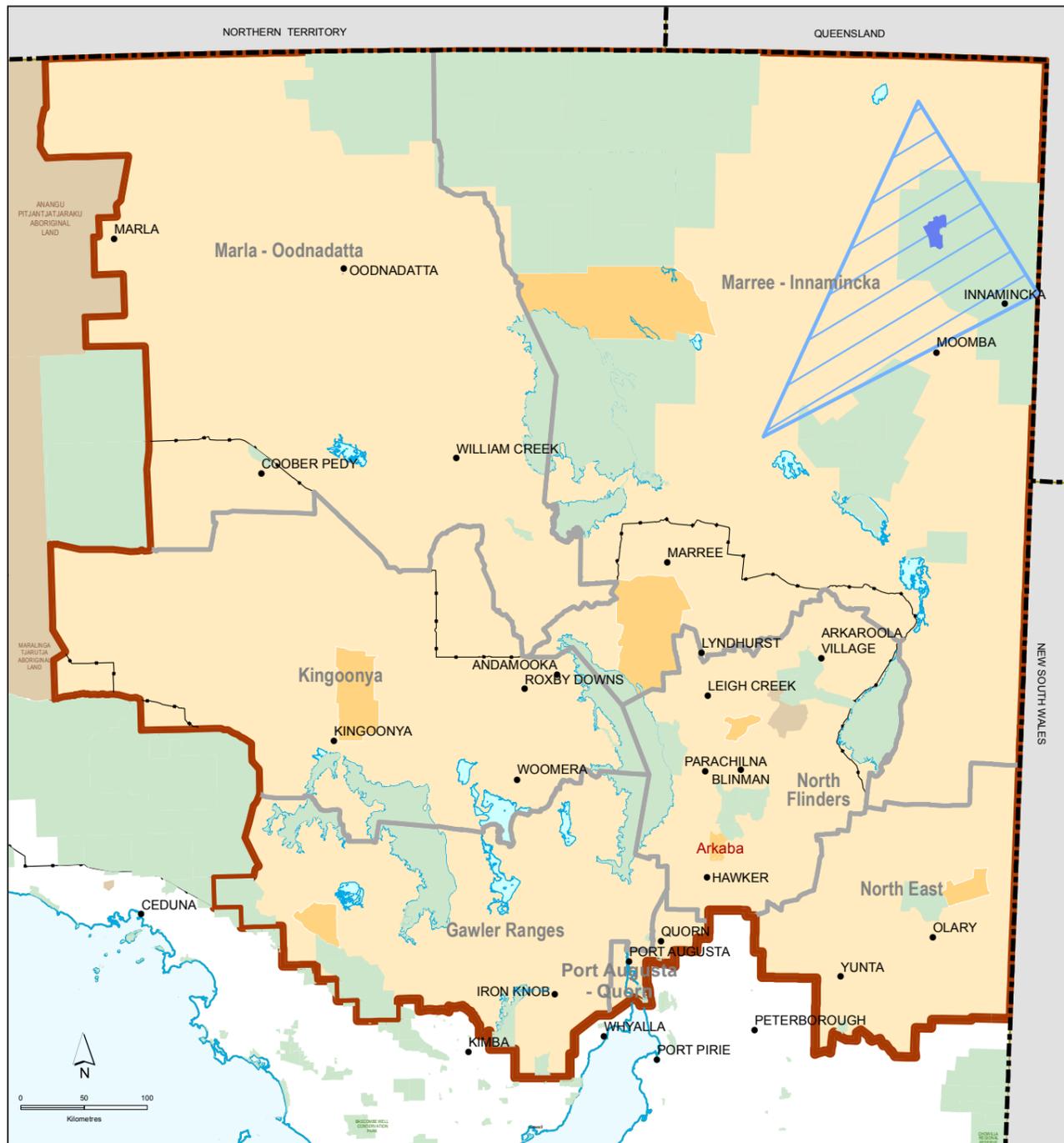
# EPBC Threatened Ecological Communities



# Endangered Ecological Community – Mound Springs of the Great Artesian Basin



# Ramsar Wetland – Coongie Lakes



 RAMSAR Reserve  
 Malkumba-Coongie Lakes NP

Produced by SA Arid Lands Landscape Board  
 PO Box 297, Port Augusta, 5700  
 landscape.sa.gov.au/saal/  
 Data Source Science, Information & Technology, DEW  
 Compiled 21/11/2022  
 Projection Lambert Conformal Conic  
 Datum Geocentric Datum of Australia, 2020



# State and Nationally Threatened Fauna and Flora and Threatened Species Action Plan Priority Species – South Australian Arid Lands<sup>a</sup>

## FAUNA

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Acanthiza iredalei iredalei</i>	Slender-billed Thornbill (western)		R	
<i>Actitis hypoleucos</i>	Common Sandpiper		R	
<i>Amytornis barbatus diamantina</i>	Grey Grasswren		R	
<i>Amytornis merrotsyi merrotsyi</i>	Flinders Ranges Short-tailed Grasswren	VU	V	
<i>Amytornis merrotsyi pedleri</i>	Gawler Ranges Short-tailed Grasswren	EN	E	
<i>Amytornis modestus</i>	Thick-billed Grasswren	VU		
<i>Amytornis modestus cowarie</i>	Thick-billed Grasswren (NE)	VU		
<i>Amytornis modestus curnamona</i>	Thick-billed Grasswren (LNE)	VU		
<i>Amytornis modestus indulkanna</i>	Thick-billed Grasswren (NW)	VU		
<i>Amytornis modestus raglessi</i>	Thick-billed Grasswren (northern FR)	VU		
<i>Amytornis textilis myall</i>	Western Grasswren	VU	V	
<i>Amytornis whitei aenigma</i>	Yellabinna Rufous Grasswren		R	
<i>Anhinga novaehollandiae novaehollandiae</i>	Australasian Darter		R	
<i>Anseranas semipalmata</i>	Magpie Goose		E	
<i>Antigone rubicunda</i>	Brolga		V	
<i>Aphelocephala leucopsis leucopsis</i>	Southern Whiteface	VU		
<i>Aphelocephala pectoralis</i>	Chestnut-breasted Whiteface		R	
<i>Aprasia pseudopulchella</i>	Flinders Worm-lizard	VU		
<i>Aprosmictus erythropterus erythropterus</i>	Red-winged Parrot		R	
<i>Ardea intermedia plumifera</i>	Plumed Egret		R	
<i>Ardeotis australis</i>	Australian Bustard		V	
<i>Arenaria interpres interpres</i>	Ruddy Turnstone	VU	R	
<i>Aspidites ramsayi</i>	Woma		R	
<i>Austroablepharus kinghorni</i>	Blacksoil Skink		R	
<i>Balaenoptera edeni</i>	Bryde's Whale		R	
<i>Bidyanus bidyanus</i>	Silver Perch	EN		
<i>Biziura lobata menziesi</i>	Musk Duck		R	
<i>Bubulcus ibis coromandus</i>	Eastern Cattle Egret		R	
<i>Burhinus gallarius</i>	Bush Stonecurlew		R	
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	VU		
<i>Calidris canutus rogersi</i>	Red Knot (ssp. rogersi)	VU	E	
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	E	
<i>Calidris melanotos</i>	Pectoral Sandpiper		R	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Calidris subminuta</i>	Long-toed Stint		R	
<i>Calidris tenuirostris</i>	Great Knot	VU	E	
<i>Caretta caretta</i>	Loggerhead Sea Turtle	EN	E	
<i>Chalinolobus picatus</i>	Little Pied Bat		E	
<i>Charadrius leschenaultii leschenaultii</i>	Greater Sand Plover	VU	R	
<i>Charadrius mongolus mongolus</i>	Lesser Sand Plover	EN	E	
<i>Chlamydera maculata</i>	Spotted Bowerbird		E	
<i>Chlamydogobius gloveri</i>	Dalhousie Goby	CR		
<i>Cinclosoma castanotum</i>	Chestnut Quailthrush (Chestnut-backed Quailthrush)		R	
<i>Cladorhynchus leucocephalus</i>	Banded Stilt		V	
<i>Climacteris affinis</i>	White-browed Treecreeper		R	
<i>Climacteris affinis affinis</i>	White-browed Treecreeper (GR, NW)		R	
<i>Climacteris affinis superciliosus</i>	White-browed Treecreeper (FR, LNE, MM)		R	
<i>Conopophila whitei</i>	Grey Honeyeater		R	
<i>Coracina papuensis robusta</i>	White-bellied Cuckooshrike		R	
<i>Corcorax melanorhamphos</i>	White-winged Chough		R	
<i>Corcorax melanorhamphos whiteae</i>	White-winged Chough (Gawler Ranges, EP, southern FR, MLR)		R	
<i>Coturnix ypsilophora australis</i>	Brown Quail		V	
<i>Craterocephalus dalhousiensis</i>	Dalhousie Hardyhead	CR		
<i>Ctenophorus maculatus</i>	Nullarbor Spotted Sand Dragon		R	
<i>Ctenotus astarte</i>	Ashy Downs Ctenotus		R	
<i>Ctenotus joanae</i>	Blacksoil Ctenotus		R	
<i>Cyclorana cultripes</i>	Knife-footed Frog		R	
<i>Dasyuroides byrnei</i>	Kowari	EN	E	
<i>Dasyurus geoffroii</i>	Western Quoll	VU	E	Y
<i>Demansia rimicola</i>	Blacksoil Whipsnake		R	
<i>Echiopsis curta</i>	Bardick		R	
<i>Egretta garzetta nigripes</i>	Little Egret		R	
<i>Egretta sacra sacra</i>	Pacific Reef Heron		R	
<i>Elanus scriptus</i>	Letter-winged Kite		V	
<i>Emblema pictum</i>	Painted Finch		R	
<i>Emydura macquarii</i>	Macquarie River Turtle		V	
<i>Epthianura crocea crocea</i>	Yellow Chat		E	
<i>Falco hypoleucos</i>	Grey Falcon	VU	R	
<i>Falco peregrinus macropus</i>	Peregrine Falcon		R	
<i>Falco subniger</i>	Black Falcon		R	
<i>Falcunculus frontatus frontatus</i>	Eastern Shrike-tit		R	
<i>Gallinago hardwickii</i>	Latham's Snipe	VU	R	
<i>Geophaps plumifera leucogaster</i>	Spinifex Pigeon		R	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Gerygone fusca</i>	Western Gerygone		R	
<i>Gerygone fusca mungi</i>	Western Gerygone (NW)		R	
<i>Gerygone olivacea olivacea</i>	White-throated Gerygone		R	
<i>Grantiella picta</i>	Painted Honeyeater	VU	R	
<i>Haematopus fuliginosus fuliginosus</i>	Sooty Oystercatcher		R	
<i>Haematopus longirostris</i>	Pied Oystercatcher		R	
<i>Haliaeetus leucogaster</i>	White-bellied Sea Eagle		E	
<i>Hamirostra melanosternon</i>	Black-breasted Buzzard		R	
<i>Hieraaetus morphnoides</i>	Little Eagle		V	
<i>Hylacola cauta cauta</i>	Shy Heathwren (EP, YP, FR, MM, upper SE)		R	
<i>Hylacola pyrrhopygia pedleri</i>	Chestnut-rumped Heathwren (southern Flinders Ranges)		V	
<i>Larus dominicanus dominicanus</i>	Kelp Gull		R	
<i>Leipoa ocellata</i>	Malleefowl	VU	V	Y
<i>Leporillus conditor</i>	Greater Stick-nest Rat	VU	V	
<i>Lerista distinguenda</i>	Southwestern Four-toed Slider		R	
<i>Lichenostomus cratitius occidentalis</i>	Purple-gaped Honeyeater (mainland SA)		R	
<i>Lichmera indistincta indistincta</i>	Brown Honeyeater		R	
<i>Limosa limosa melanuroides</i>	Black-tailed Godwit	EN	R	
<i>Lophochroa leadbeateri leadbeateri</i>	Major Mitchell's Cockatoo (LNE, MM)	EN	R	
<i>Lophochroa leadbeateri mollis</i>	Major Mitchell's Cockatoo (NW, EP)		R	
<i>Lophoictinia isura</i>	Square-tailed Kite		E	
<i>Lucasium steindachneri</i>	Map Gecko		R	
<i>Macronectes giganteus</i>	Southern Giant Petrel	EN	V	
<i>Macrotis lagotis</i>	Greater Bilby (Bilby)	VU	V	Y
<i>Megaptera novaeangliae</i>	Humpback Whale		V	
<i>Melanodryas cucullata cucullata</i>	Hooded Robin (YP, MN, AP, MLR, MM, SE)	EN	R	
<i>Melithreptus gularis laetior</i>	Golden-backed Honeyeater		R	
<i>Mogurnda clivicola</i>	Flinders Ranges Purple-Spotted Gudgeon	VU		
<i>Morelia spilota</i>	Carpet Python		R	
<i>Mormopterus eleryi</i>	Bristle-faced Free-tailed Bat		V	
<i>Myiagra cyanoleuca</i>	Satin Flycatcher		E	
<i>Myiagra inquieta</i>	Restless Flycatcher		R	
<i>Myrmecobius fasciatus</i>	Numbat	EN	E	Y
<i>Neelaps bimaculatus</i>	Black-naped Burrowing Snake		R	
<i>Neobatrachus sutor</i>	Shoemaker Frog		V	
<i>Neophema chrysogaster</i>	Orange-bellied Parrot	CR	E	Y
<i>Neophema chrysostoma</i>	Blue-winged Parrot	VU	V	
<i>Neophema elegans elegans</i>	Elegant Parrot		R	
<i>Neophema petrophila zietzi</i>	Rock Parrot		R	
<i>Neophema splendida</i>	Scarlet-chested Parrot		R	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Neosilurus gloveri</i>	Dalhousie Catfish	CR		
<i>Nephrurus deleani</i>	Pernatty Knob-tailed Gecko		R	
<i>Ninox connivens connivens</i>	Barking Owl		R	
<i>Notomys cervinus</i>	Fawn Hopping-mouse		V	
<i>Notomys fuscus</i>	Dusky Hopping-mouse	VU	V	
<i>Notoscincus ornatus</i>	Desert Glossy Skink		R	
<i>Numenius madagascariensis</i>	Far Eastern Curlew	CR	E	Y
<i>Numenius phaeopus variegatus</i>	Whimbrel		R	
<i>Oedura cincta</i>	Inland Velvet Gecko		R	
<i>Ophidiocephalus taeniatus</i>	Bronzeback snake-lizard	VU	R	
<i>Oriolus sagittatus sagittatus</i>	Olive-backed Oriole		R	
<i>Oxyura australis</i>	Blue-billed Duck		R	
<i>Pachycephala inornata</i>	Gilbert's Whistler		R	
<i>Pandion haliaetus cristatus</i>	Eastern Osprey		E	
<i>Pedionomus torquatus</i>	Plains-wanderer	CR	E	Y
<i>Perameles bougainville bougainville</i>	Western Barred Bandicoot (Shark Bay)	EN	E	
<i>Petrogale lateralis centralis</i>	Warru (Central Australian Rock-wallaby)	VU	E	
<i>Petrogale xanthopus xanthopus</i>	Yellow-footed Rock-wallaby	VU	V	
<i>Petroica boodang boodang</i>	Scarlet Robin		R	
<i>Pezoporus occidentalis</i>	Night Parrot	CR	E	Y
<i>Phaps histrionica</i>	Flock Bronzewing		R	
<i>Phascogale calura</i>	Red-tailed Phascogale	VU	E	
<i>Plectorhyncha lanceolata</i>	Striped Honeyeater		R	
<i>Plegadis falcinellus</i>	Glossy Ibis		R	
<i>Pluvialis fulva</i>	Pacific Golden Plover		R	
<i>Pluvialis squatarola squatarola</i>	Grey Plover	VU		
<i>Podiceps cristatus australis</i>	Great Crested Grebe		R	
<i>Polytelis alexandrae</i>	Princess Parrot	VU	V	Y
<i>Pomatostomus temporalis rubeculus</i>	Red-breasted Babbler (North West)		R	
<i>Pseudomys australis</i>	Plains Mouse	VU	V	
<i>Pseudonaja guttata</i>	Speckled Brown Snake		R	
<i>Pseudophryne bibronii</i>	Brown Broodfrog		R	
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	R	
<i>Pteropus scapulatus</i>	Little Red Flying-fox		R	
<i>Rostratula australis</i>	Australian Painted-snipe	EN	E	
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tailed Bat		R	
<i>Sminthopsis psammophila</i>	Sandhill Dunnart	EN	V	
<i>Sminthopsis youngsoni</i>	Lesser Hairy-footed Dunnart		R	
<i>Spatula rhynchotis</i>	Australasian Shoveler		R	
<i>Stagonopleura guttata</i>	Diamond Firetail	VU	V	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Sternula nereis nereis</i>	Fairy Tern	VU	E	
<i>Stictonetta naevosa</i>	Freckled Duck		V	
<i>Stipiturus ruficeps</i>	Rufous-crowned Emuwren		R	
<i>Taphozous hilli</i>	Hill's Sheath-tailed Bat		R	
<i>Trichosurus vulpecula</i>	Common Brushtail Possum		R	
<i>Tringa glareola</i>	Wood Sandpiper		R	
<i>Tringa nebularia</i>	Common Greenshank	EN		
<i>Turnix varius varius</i>	Painted Buttonquail		R	
<i>Tyto longimembris longimembris</i>	Eastern Grass Owl		R	
<i>Tyto novaehollandiae novaehollandiae</i>	Australian Masked Owl		E	
<i>Uperoleia rugosa</i>	Chubby Toadlet		R	
<i>Varanus rosenbergi</i>	Heath Goanna		V	
<i>Varanus varius</i>	Lace Monitor		R	
<i>Vermicella annulata</i>	Common Bandy Bandy		R	
<i>Xenus cinereus</i>	Terek Sandpiper	VU	R	
<i>Zapornia tabuensis</i>	Spotless Crane		R	

# FLORA

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Acacia araneosa</i>	Spidery Wattle	VU	E	
<i>Acacia barattensis</i>	Baratta Wattle		R	
<i>Acacia carneorum</i>	Needle Wattle	VU	V	
<i>Acacia confluens</i>	Arkaroola Wattle		V	
<i>Acacia georginae</i>	Georgina Gidgee		R	
<i>Acacia iteaphylla</i>	Flinders Ranges Wattle		R	
<i>Acacia jennerae</i>	Coonavittra Wattle		R	
<i>Acacia latzii</i>		VU	R	
<i>Acacia loderi</i>	Nealie		R	
<i>Acacia menzелиi</i>	Menzel's Wattle	VU	V	
<i>Acacia montana</i>	Mallee Wattle		R	
<i>Acacia pendula</i>	Weeping Myall		V	
<i>Acacia pickardii</i>	Pickard's Wattle	VU	R	
<i>Acacia quornensis</i>	Quorn Wattle		R	
<i>Acacia rhigiophylla</i>	Dagger-leaf Wattle		R	
<i>Acacia rhodophloia</i>	Minni Ritchi		R	
<i>Acacia tenuissima</i>	Slender Wattle		R	
<i>Acacia toondulya</i>			R	
<i>Acacia trineura</i>	Three-nerve Wattle		E	
<i>Althaea australis</i>	Australian Mallow		V	
<i>Amphibromus macrorhinus</i>	Long-nosed Swamp Wallaby-grass		R	
<i>Anogramma leptophylla</i>	Annual Fern		R	
<i>Anthocercis angustifolia</i>	Narrow-leaf Ray-flower		R	
<i>Anthocercis anisantha ssp. anisantha</i>	Port Lincoln Ray-flower		R	
<i>Aristida arida</i>			R	
<i>Asperula syrticola</i>	Southern Flinders Woodruff		R	
<i>Atriplex eichleri</i>	Eichler's Saltbush		R	
<i>Atriplex humifusa</i>			V	
<i>Atriplex kochiana</i>	Koch's Saltbush		V	
<i>Atriplex morrisii</i>			V	
<i>Atriplex papillata</i>	Coral Saltbush		E	
<i>Austrostipa breviglumis</i>	Cane Spear-grass		R	
<i>Austrostipa densiflora</i>	Fox-tail Spear-grass		R	
<i>Austrostipa echinata</i>	Spiny Spear-grass		R	
<i>Austrostipa gibbosa</i>	Swollen Spear-grass		R	
<i>Austrostipa petraea</i>	Flinders Range Spear-grass		R	
<i>Austrostipa plumigera</i>			R	
<i>Austrostipa tenuifolia</i>			R	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Austrostipa tuckeri</i>	Tucker's Spear-grass		R	
<i>Bergia occulpetala</i>			V	
<i>Blechnum rupestre</i>	Small Rasp-fern		E	
<i>Bothriochloa macra</i>	Red-leg Grass		R	
<i>Brachycome debilis (NC)</i>	Weak Daisy		R	
<i>Brachyscome ciliaris var. subintegrifolia</i>			R	
<i>Brachyscome muelleri</i>	Corunna Daisy	EN	E	
<i>Brachyscome tatei</i>	Nullarbor Daisy		R	
<i>Bulbostylis pyriformis</i>			R	
<i>Bulbostylis turbinata</i>			R	
<i>Caladenia coactilis</i>	Flinders Ranges Caladenia		R	
<i>Caladenia flaccida</i>	Drooping Spider-orchid		V	
<i>Caladenia gladiolata</i>	Bayonet Spider-orchid	EN	E	
<i>Caladenia tensa</i>	Inland Green-comb Spider-orchid	EN		
<i>Calandrinia sphaerophylla</i>	Bead Purslane		R	
<i>Calandrinia stagnensis</i>			R	
<i>Callitriche sonderi</i>	Matted Water Starwort		R	
<i>Calocephalus sonderi</i>	Pale Beauty-heads		R	
<i>Calotis scapigera</i>	Tufted Burr-daisy		R	
<i>Centrolepis cephaliformis ssp. cephaliformis</i>	Cushion Centrolepis		R	
<i>Ceratogyne obionoides</i>	Wingwort		R	
<i>Citrus glauca</i>	Desert Lime		V	
<i>Cladium procerum</i>	Leafy Twig-rush		R	
<i>Codonocarpus pyramidalis</i>	Slender Bell-fruit	VU	E	
<i>Commersonia craurophylla</i>	Brittle-leaf Rulingia		V	
<i>Coronidium gunnianum</i>	Pale Everlasting		E	
<i>Corynotheca licrota</i>	Sand Lily		R	
<i>Crassula exserta</i>	Large-fruit Crassula		R	
<i>Crassula peduncularis</i>	Purple Crassula		R	
<i>Cryptandra campanulata</i>	Long-flower Cryptandra		R	
<i>Cullen parvum</i>	Small Scurf-pea		V	
<i>Cuscuta tasmanica</i>	Tasmanian Dodder		V	
<i>Cyperus bifax</i>	Downs Flat-sedge		R	
<i>Cyperus castaneus</i>			R	
<i>Cyperus concinnus</i>			R	
<i>Cyperus dactylotes</i>			V	
<i>Cyperus nervulosus</i>			R	
<i>Daviesia benthamii ssp. humilis (NC)</i>	Mallee Bitter-pea		R	
<i>Daviesia stricta</i>	Flinders Ranges Bitter-pea		R	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Deyeuxia densa</i>	Heath Bent-grass		R	
<i>Dianella longifolia</i> var. <i>grandis</i>	Pale Flax-lily		R	
<i>Dianella porracea</i>	Pale Flax-lily		V	
<i>Diuris sulphurea</i>	Tiger Orchid		R	
<i>Dodonaea subglandulifera</i>		EN	E	
<i>Duma horrida</i> ssp. <i>horrida</i>	Spiny Lignum		R	
<i>Echinopogon ovatus</i>	Rough-beard Grass		R	
<i>Elachanthus glaber</i>	Shiny Elachanth		R	
<i>Elacholoma prostrata</i>	Small Monkey-flower		R	
<i>Elatine gratioloides</i>	Waterwort		R	
<i>Eleocharis geniculata</i>	Spike-rush		R	
<i>Eleocharis papillosa</i>		VU	R	
<i>Eleocharis plana</i>	Flat Spike-rush		R	
<i>Embadium johnstonii</i>	Johnston's Slipper-plant		R	
<i>Embadium stagnense</i>	Arcoona Slipper-plant		R	
<i>Eragrostis infecunda</i>	Barren Cane-grass		R	
<i>Eragrostis lacunaria</i>	Purple Love-grass		R	
<i>Eremophila gibbifolia</i>	Coccid Emubush		R	
<i>Eremophila interstans</i> ssp. <i>interstans</i>			R	
<i>Eremophila pentaptera</i>			R	
<i>Eremophila polyclada</i>	Twiggy Emubush		R	
<i>Eremophila subfloccosa</i> ssp. <i>glandulosa</i>	Green-flower Emubush		R	
<i>Eriocaulon carsonii</i> ssp. <i>carsonii</i>	Salt Pipewort	EN	E	
<i>Erodium</i> sp. <i>Blesing (J.R.Wheeler 471)</i>	Blesing Heron's-bill		R	
<i>Eryngium ovinum</i>	Blue Devil		V	
<i>Eryngium vesiculosum</i>	Prostrate Blue Devil		R	
<i>Eucalyptus albens</i>	White Box		R	
<i>Eucalyptus goniocalyx</i> ssp. <i>exposa</i>	Long-leaf Box		V	
<i>Eucalyptus percostata</i>	Ribbed White Mallee		R	
<i>Eucalyptus viminalis</i> ssp. <i>viminalis</i>	Manna Gum		R	
<i>Eucalyptus viridis</i> ssp. <i>viridis (NC)</i>	Green Mallee		R	
<i>Festuca benthamiana</i>	Bentham's Fescue		R	
<i>Frankenia cinerea</i>			R	
<i>Frankenia cupularis</i>			R	
<i>Frankenia plicata</i>		EN	V	
<i>Frankenia subteres</i>			R	
<i>Geijera parviflora</i>	Wilga		R	
<i>Gilesia biniflora</i>	Western Tar-vine		R	
<i>Glossostigma</i> sp. <i>Long stout-pedicelled (W.R.Barker 2481)</i>			V	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Goodenia anfracta</i>			R	
<i>Goodenia benthamiana</i>	Bentham's Goodenia		R	
<i>Goodenia chambersii</i>			R	
<i>Goodenia heteromera</i>	Spreading Goodenia		R	
<i>Goodenia saccata</i>	Flinders Ranges Goodenia		R	
<i>Gratwickia monochaeta</i>			R	
<i>Grevillea anethifolia</i>			R	
<i>Gymnoschoenus sphaerocephalus</i>	Button Grass		E	
<i>Haeckeria cassiniiformis</i>	Dogwood Haeckeria		R	
<i>Haegiela tatei</i>	Small Nut-heads		R	
<i>Hakea tephrosperma</i>	Hooked Needlewood		R	
<i>Haloragis eichleri</i>	Eichler's Raspwort		R	
<i>Hemichroa mesembryanthema</i>	Pigface Hemichroa		V	
<i>Hibbertia crispula</i>	Ooldea Guinea-flower	VU	V	
<i>Histiopteris incisa</i>	Bat's-wing Fern		E	
<i>Hovea purpurea</i>	Tall Hovea		R	
<i>Iotasperma sessilifolium</i>			R	
<i>Lawrencia berthae</i>	Showy Lawrencia		R	
<i>Lepidium pseudoruderale</i>			R	
<i>Lepidium pseudotasmanicum</i>	Shade Peppercross		V	
<i>Lepidosperma avium</i>	Central Australian Rapier-sedge		R	
<i>Leptomeria preissiana</i>			E	
<i>Leptorhynchos elongatus</i>	Lanky Buttons		E	
<i>Leptorhynchos melanocarpus</i>	Lake Acraman Button-daisy		V	
<i>Leptorhynchos orientalis</i>	Eastern Annual Buttons		R	
<i>Leptorhynchos scaber</i>	Annual Buttons		R	
<i>Leptorhynchos tenuifolius</i>	Wiry Buttons		R	
<i>Levenhookia stipitata</i>			R	
<i>Limosella granitica</i>	Granite Mudwort	VU	V	
<i>Lobelia cleistogamoides</i>			R	
<i>Lobelia heterophylla</i> ssp. <i>centralis</i>			R	
<i>Logania saxatilis</i>	Rock Logania		R	
<i>Lythrum salicaria</i>	Purple Loosestrife		R	
<i>Maireana decalvans</i>	Black Cotton-bush		E	
<i>Maireana excavata</i>	Bottle Fissure-plant		V	
<i>Maireana melanocarpa</i>	Black-fruit Bluebush		R	
<i>Maireana pentagona</i>	Slender Fissure-plant		R	
<i>Maireana rohrlachii</i>	Rohrlach's Bluebush		R	
<i>Maireana suaedifolia</i>	Lax Bluebush		R	
<i>Malacocera gracilis</i>	Slender Soft-horns		V	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Melaleuca armillaris ssp. akineta</i>	Needle-leaf Honey-myrtle		R	
<i>Melaleuca leiocarpa</i>	Pungent Honey-myrtle		R	
<i>Melaleuca oxyphylla</i>	Pointed-leaf Honey-myrtle		R	
<i>Menkea lutea</i>			R	
<i>Mentha satuireioides</i>	Native Pennyroyal		R	
<i>Microlepidium pilosulum</i>	Hairy Shepherd's-purse		R	
<i>Microtis eremaea</i>	Slender Onion-orchid		E	
<i>Myoporum parvifolium</i>	Creeping Boobiella		R	
<i>Neurachne lanigera</i>	Woolly Mulga-grass		R	
<i>Nicotiana burbridgeae</i>			V	
<i>Nicotiana truncata</i>			R	
<i>Nymphoides crenata</i>	Wavy Marshwort		R	
<i>Olearia arckaringensis</i>	Arckaringa Daisy	EN	E	Y
<i>Olearia pannosa ssp. cardiophylla</i>	Velvet Daisy-bush		R	
<i>Olearia pannosa ssp. pannosa</i>	Silver Daisy-bush	VU	V	
<i>Olearia picridifolia</i>	Rasp Daisy-bush		R	
<i>Ophioglossum polyphyllum</i>	Large Adder's-tongue		R	
<i>Orobanche cernua var. australiana</i>	Australian Broomrape		R	
<i>Osteocarpum acropterum var. deminutum</i>	Wingless Bonefruit		R	
<i>Osteocarpum pentapterum</i>	Five-wing Bonefruit		E	
<i>Ozothamnus scaber</i>	Rough Bush-everlasting		V	
<i>Philothea angustifolia ssp. angustifolia</i>	Narrow-leaf Wax-flower		R	
<i>Philothea difformis ssp. difformis</i>	Small-leaf Wax-flower		V	
<i>Phlegmatospermum eremaeum</i>	Spreading Cress		R	
<i>Phlegmatospermum richardsii</i>	Nullarbor Cress		V	
<i>Phyllangium sulcatum</i>			V	
<i>Pilularia novae-hollandiae</i>	Austral Pillwort		R	
<i>Pimelea penicillaris</i>	Sandhill Riceflower		R	
<i>Plantago multiscapa</i>	Many-stem Plantain		V	
<i>Plantago sp. A (A.C.Robinson 704)</i>	Pearson Island Plantain		R	
<i>Poa drummondiana</i>	Knotted Poa		R	
<i>Poa fax</i>	Scaly Poa		R	
<i>Podolepis jaceoides</i>	Showy Copper-wire Daisy		R	
<i>Podolepis jaceoides (NC)</i>	Showy Copper-wire Daisy		R	
<i>Podolepis muelleri</i>	Button Podolepis		V	
<i>Potamogeton ochreatus</i>	Blunt Pondweed		R	
<i>Prasophyllum pallidum</i>	Pale Leek-orchid	VU	R	
<i>Prasophyllum validum</i>	Mount Remarkable Leek-orchid	VU	V	
<i>Pteris tremula</i>	Tender Brake		R	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Pterostylis lingua</i>			E	
<i>Pterostylis xerophila</i>	Desert Greenhood	VU	V	
<i>Ptilotus angustifolius</i>	Narrow-leaf Yellow-tails		E	
<i>Ptilotus aristatus ssp. aristatus</i>			R	
<i>Ptilotus aristatus var. eichlerianus (NC)</i>			V	
<i>Ptilotus barkeri</i>	Barker's Mulla Mulla		R	
<i>Ptilotus erubescens</i>	Hairy-tails		R	
<i>Pycnosorus chrysanthes</i>	Yellow Drumsticks		E	
<i>Pycnosorus globosus</i>	Drumsticks		V	
<i>Ranunculus pumilio var. politus</i>	Smooth-fruit Ferny Buttercup		V	
<i>Ranunculus sessiliflorus var. pilulifer</i>	Annual Buttercup		V	
<i>Rhodanthe oppositifolia ssp. oppositifolia</i>	Twin-leaf Everlasting		V	
<i>Roepera crassissima</i>	Thick Twinleaf		R	
<i>Roepera humillima</i>	Small-fruit Twinleaf		R	
<i>Roepera hybrida</i>			R	
<i>Rumex dumosus</i>	Wiry Dock		R	
<i>Rumex dumosus var. (NC)</i>	Wiry Dock		R	
<i>Rytidosperma laeve</i>	Smooth Wallaby-grass		R	
<i>Rytidosperma tenuius</i>	Short-awn Wallaby-grass		R	
<i>Samolus eremaeus</i>	Desert Samolus		R	
<i>Santalum spicatum</i>	Sandalwood		V	
<i>Sarcozona bicarinata</i>	Ridged Noon-flower		V	
<i>Schoenus sculptus</i>	Gimlet Bog-rush		R	
<i>Scleranthus diander</i>	Tufted Knawel		E	
<i>Sclerolaena blackiana</i>	Black's Bindyi		R	
<i>Sclerolaena fontinalis</i>	Mound Spring Bindyi		R	
<i>Sclerolaena symoniana</i>	Symon's Bindyi		V	
<i>Scutellaria humilis</i>	Dwarf Skullcap		R	
<i>Senecio gawlerensis</i>	Gawler Ranges Groundsel		R	
<i>Senecio gypsicola</i>	Gypsum Groundsel		R	
<i>Senecio laceratus</i>	Cut-leaf Groundsel		R	
<i>Senecio megaglossus</i>	Large-flower Groundsel	VU	E	
<i>Senecio pinnatifolius var. pinnatifolius</i>			R	
<i>Sida sp. Wakaya Desert (C.Dunlop 1984)</i>			R	
<i>Stellaria multiflora ssp. collaris</i>	Rayless Starwort		R	
<i>Stemodia sp. Haegii (J.Z.Weber 9055)</i>	Haegi's Stemodia		R	
<i>Stenanthemum arens</i>			R	
<i>Stylidium desertorum</i>			V	
<i>Stylidium inaequipetalum</i>			V	

SPECIES <sup>b</sup>	COMMON NAME	EPBC ACT LISTING <sup>c,d</sup>	NPW ACT LISTING <sup>c,e</sup>	TSAP PRIORITY <sup>f</sup>
<i>Stypanandra glauca</i>	Nodding Grass-lily		V	
<i>Swainsona dictyocarpa</i>			V	
<i>Swainsona fuscoviridis</i>	Dark Green Swainson-pea		R	
<i>Swainsona leeana</i>	Lee's Swainson-pea		R	
<i>Swainsona microcalyx</i>	Wild Violet		R	
<i>Swainsona minutiflora</i>	Small-flower Swainson-pea		V	
<i>Swainsona murrayana</i>	Murray Swainson-pea	VU	V	
<i>Swainsona oligophylla</i>			R	
<i>Swainsona procumbens</i>	Broughton Pea		V	
<i>Swainsona pyrophila</i>	Yellow Swainson-pea	VU	R	
<i>Swainsona vestita</i>			V	
<i>Swainsona viridis</i>	Creeping Darling Pea		V	
<i>Synostemon ramosissimus</i>			R	
<i>Tecticornia cupuliformis</i>			V	
<i>Tecticornia lepidosperma</i>			R	
<i>Teucrium grandiusculum ssp. pilosum</i>			E	
<i>Thelymitra grandiflora</i>	Great Sun-orchid		R	
<i>Thysanotus tenellus</i>	Grassy Fringe-lily		R	
<i>Thysanotus tuberosus ssp.</i>	Tuber Fringe-lily		V	
<i>Thysanotus tuberosus ssp. tuberosus</i>	Tuber Fringe-lily		V	
<i>Typhonium alismifolium</i>			R	
<i>Utricularia australis</i>	Yellow Bladderwort		R	
<i>Utricularia violacea</i>	Violet Bladderwort		R	
<i>Veronica decorosa</i>	Showy Speedwell		R	
<i>Vittadinia australasica var. oricola</i>	New Holland Daisy		V	
<i>Wurmbea decumbens</i>	Trailing Nancy		R	
<i>Wurmbea deserticola</i>	Desert Nancy		R	
<i>Wurmbea nilpinna</i>			V	
<i>Wurmbea stellata</i>	Star Nancy		R	
<i>Xerothamnella parvifolia</i>		VU	E	
<i>Zostera muelleri ssp. mucronata</i>	Garweed		R	

<sup>a</sup> Species records and conservation ratings were obtained from Department for Environment and Water (2026). Biological Databases of South Australia – Overview. Webpage accessed: <https://www.environment.sa.gov.au/topics/science/information-and-data/biological-databases-of-south-australia> Date accessed: 11/03/2026. Data is updated regularly and subject to change.

<sup>b</sup> Species with records dating earlier than 1960 were excluded. Planted species were also excluded.

<sup>c</sup> Extinct species and fauna subspecies are excluded. Only qualified conservation ratings for threatened plant species are included.

<sup>d</sup> Species are listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) under the following ratings; Vulnerable = VU, Endangered = EN, Critically Endangered = CR

<sup>e</sup> Species are listed as threatened under the National Parks and Wildlife Act 1972 (NPW Act) under the following ratings; Rare = R, Vulnerable = V, Endangered = E

<sup>f</sup> Some species are also listed as Threatened Species Action Plan 2022-2032 (TSAP) priorities nationally indicated by a "Y".