

GREEN ADELAIDE

A new approach to managing
our urban environment



Government of South Australia
Department for Environment
and Water

Green Adelaide is a hills to sea approach connecting people to nature



We are fortunate to live in a city set amongst beautiful natural surrounds and bounded by stunning beaches, wilderness areas, national parks, picturesque hills and unique regions.

Adelaide has consistently been rated as one of the world's most liveable cities but we must work hard to retain that status in the face of mounting challenges, such as a changing climate and population growth.

Now, through the establishment of Green Adelaide, we have the opportunity to fulfil an ambitious vision for the future that transforms our city into a world-leading, sustainable, green and climate resilient city. We will achieve this through an integrated approach to urban water and coastal management, greening of our streets and enhancing our biodiversity. We will become a global model for connecting the community with nature.

Green Adelaide will bring opportunity, innovation and leadership, building on successful on-ground outcomes delivered by our valued volunteers and other partners to drive new and bold initiatives to reach ambitious environmental outcomes.

I look forward to working with you to develop this exciting new body.

A handwritten signature in white ink on a dark green background, appearing to read 'David Speirs'.

David Speirs MP
Minister for Environment and Water

Acknowledgement of Country

The Government of South Australia acknowledges the Kurna people as the custodians of the Adelaide-Tarntanya region and that their cultural and heritage beliefs are still as important to the living Kurna people today. We also acknowledge that Kurna peoples' deep knowledge and connection with Yarta (Country) and autonomy are determinants of Aboriginal health and wellbeing and will support increased opportunities for involvement in the management of land, sea and water, and enhanced engagement in decision-making processes.

What is Green Adelaide?

Green Adelaide offers a new approach to managing our urban environment. It will drive innovation and action in metropolitan Adelaide to deliver a climate resilient and ecologically vibrant city, from the hills to the sea. It will be globally recognised for its liveability and thriving environment.

Partnerships and collaboration with all levels of government, non-government organisations, the community, researchers and Kurna as Traditional Owners will be at the heart of Green Adelaide.

Green Adelaide will build on Colonel William Light's vision for 'a river city surrounded by parklands for fresh air and a rural hinterland beyond' to create a city with greening at its heart and throughout its suburbs and neighbourhoods, where people will want to live, work and play.

Green Adelaide will ensure that all South Australians are connected to nature and recognise it as integral to their health and wellbeing.

Adelaide will become a leading example of resilience to a changing climate. We make the commitment to tackle this threat boldly by integrating and intensifying our collective efforts. In this way we will not just adapt but thrive.

Adelaide will aspire to be one of the world's first National Park Cities, bringing together health, education, climate, sustainability, biodiversity, water and coastal management outcomes.

Green Adelaide and natural resource management reform

The Government of South Australia has committed to a range of reforms to the management of natural resources across the state. Green Adelaide will be a new entity with a focus on these functions in metropolitan Adelaide.

The Minister for Environment and Water has listened to feedback from conversations with key stakeholders and the broader community on how these reforms can best be realised, including in the urban landscape.



Kurna Nation

Kurna Native Title was proclaimed in 2018 recognising Kurna as the First Nation and that Kurna people have been caring for the Adelaide plains for 45,000 years.

Kurna has had strong influence shaping how Adelaide-Tartanya has been designed, with Kurna historically gathering in Adelaide-Tartanya for commerce and politics.

Green Adelaide provides a perfect opportunity to build on existing relationships with Kurna and other nations, to embed Aboriginal culture and knowledge, and support Aboriginal people to take a leading role in managing natural resources in the urban environment.

Our purpose

Adelaide's growth and prosperity depend on sustaining, protecting and growing our natural environments, taking on the challenges of a drying and warming climate and safeguarding and promoting the health and wellbeing of its people.

We can be rightly proud of the liveability of our city, but we can't stand still. The issues ahead will require strong leadership, collaboration, influence and commitment across all tiers of government and the community so we can prepare for and respond to future events.

A snapshot of the challenges we face



Urban water

Alongside economic growth and vitality, urbanisation also brings challenges such as reduced green open space, stormwater management, increased rainwater runoff and water security issues.



Climate Change

The consequences of **global warming** can already be observed in Adelaide through more extreme weather, rising sea levels, diminishing rainfall and increasing temperatures.



Urban infill/densification

The 30 Year Plan for Greater Adelaide identified the target, '85% of all new housing in metropolitan Adelaide will be built in established urban areas by 2045'.

This contains our urban footprint and protects our resources. But our progress needs to be carefully managed to ensure a healthy balance of public green space, important backyard habitats for wildlife and increased stormwater runoff.



Maintaining health and wellbeing

Currently 46% of South Australians have been diagnosed with at least one chronic disease or condition (Chronic Disease Action Plan for South Australia, 2009-2018).

Spending time in nature and living close to parks and other green spaces provides benefits for physical, mental and social health and wellbeing.



Community connections

The increase in people living in urban areas and the reduction of urban green spaces contribute to a growing disconnect from nature and from each other, resulting in declining health, wellbeing and social connections.



Reduction of habitat

Urban growth can be catastrophic for native species and maintaining flora and fauna in the city. Urban infill can cause habitat loss, introduction of exotic species, attract abundant species, increased pollution and the creation of urban heat islands.

Urban heat mapping



Mapping of temperatures has been undertaken by local government across most of metropolitan Adelaide.

It shows the 'urban heat island effect' – highlighting the locations and surfaces with the highest temperatures and where heat is retained.

By understanding these hot spots we can target green infrastructure such as parks, trees and plants on streets and rooftops and green walls to where they are needed most, creating more liveable communities, supporting property values and reducing emissions.

The urban heat island effect is likely to worsen with climate change impacts. Without green, open spaces, the average temperature of our cities could be 4°C hotter, increasing costs to households and impacting on the health and wellbeing of our community.

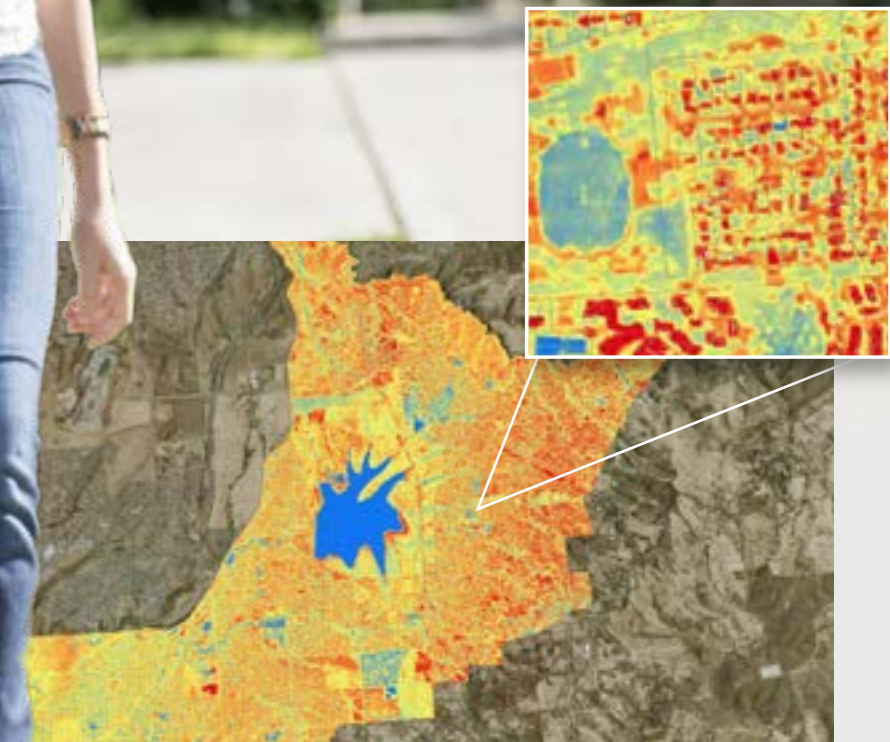


Image: City of Onkaparinga heat mapping

Green Adelaide's priorities

Green Adelaide will be a strategic, influential organisation that drives innovative reform across the urban landscape, with a strong focus on seven key priorities.



Coastal management



Water resources and wetlands



Green streets and flourishing parklands



Biodiversity sensitive and water sensitive urban design



Controlling pest plants and animals



Nature education



Fauna, flora and ecosystem health in the urban environment



Coastal management

South Australia's stunning coastline includes beaches, dune systems, tidal waters, wetlands and cliffs attracting over nine million visitors each year. Our coastal environment contributes significantly to our economy, delivers social, cultural and health benefits and features vital habitats for our flora and fauna, while also protecting development and housing from flooding and erosion.

We have an opportunity to oversee a unified focus on the management of our coastal and marine environments through connecting and balancing environmental and recreational values.

Green Adelaide will focus on coastal access, restoration of biodiversity, management of significant coastal sites, management of seagrass habitat and reef restoration. This requires an integrated approach through significant partnerships with community groups and local government.

Dedicated resources and effort will also be directed towards protecting our coastline against sea level rise and climate change.

The government's *New life for our coastal environment* commitment will deliver practical outcomes, while also developing longer term management measures to protect and enhance South Australia's remarkable coastal habitat.

Green Adelaide will:

- » Oversee the management of the metropolitan coast through a new strategy that includes restoration and conservation of coastal biodiversity and significant coastal sites—including Tennyson Dunes, reefs and seagrass habitat—and beach replenishment activities.
- » Ensure a coordinated approach to managing our metropolitan coastline through partnerships with local government and non-government organisations, as well as key bodies including the Coast Protection Board.



Coastal biodiversity conservation – the Hooded Plover

The 'Hoodies', as they are known by the community of 'Hoodie Helpers', are a small-to medium-sized coastal shorebird that nests on our sandy beaches. Nationally they are listed as vulnerable, with fewer than 800 in South Australia and only 7000 in Australia.

A partnership with councils, BirdLife Australia and volunteer groups monitors nesting Hooded Plovers, records sightings and implements management actions where required, such as rope fences and temporary signage at nests and chick shelters.

Hoodie pairs and chicks can be found at four locations in the Green Adelaide region.

Green Adelaide will continue management partnerships like the one for the Hooded Plover, ensuring such coordinated efforts are efficient, effective and cover the whole Green Adelaide area.





Water resources and wetlands

Water resources, including rivers and wetlands, sustain our way of life and our economic vitality. South Australia is already seen as an international leader in urban water management, but there is scope for improvement, particularly in managing our rivers and wetlands with a united, cross-boundary approach.

The management of Adelaide's water resources and wetlands is shared across multiple entities and organisations, including private landholders with a watercourse located on their property. This creates complex arrangements.

The smart use of our water resources can create green open spaces and healthier waterways and beaches. This supports biodiversity and delivering health and wellbeing benefits as well as improved resilience to flood, drought and a changing climate.

The continuous improvement of our existing waterways, wetlands and coastal areas ensures their safety, health and sustainability. Identifying and implementing new river and wetland restoration and revitalisation opportunities is equally important. As Adelaide continues to grow, Green Adelaide will be central to promoting integrated action for our urban water resources and wetlands.

This will assist with improved stormwater management and use from local to city scale.

Green Adelaide will:

- » Drive an integrated 'hills to sea' approach to urban water management that considers water sensitive urban design, re-use of water, public amenity, flood management and the quality of water entering the gulf.
- » Take a leadership role in reviewing the existing complex management arrangements, such as for the River Torrens.



River Torrens catchment – an example of complex management



With a catchment of 500 km², the River Torrens (*Karrawirra Parri*) originates near Mount Pleasant in the Mount Lofty Ranges and flows west for around 80 km, across the Adelaide Plains to the ocean at West Beach. As the major urban waterway in Adelaide, the river serves many civil, environmental, ecological, recreational, health and cultural functions. These multiple functions and changing land uses throughout the catchment make managing the river and its catchment inherently complex.



Currently, numerous state government agencies, statutory authorities and councils all have some river management responsibilities for the River Torrens and its catchment. In addition, thousands of private land owners have a legislated duty of care for the river and its tributaries on their property.

Green Adelaide will collaborate with partners to coordinate complex management arrangements.



Oaklands Wetland – stormwater use for irrigation

Oaklands Wetland has transformed a disused former driver education centre site into a vibrant green space where visitors can connect directly with nature. The wetland is alive with a wide variety of wildlife, including birds, aquatic life and insects and protected species.

The wetland forms part of an integrated water recycling system helping to keep reserves green across the City of Marion, reducing the use of mains water and protecting natural groundwater reserves. Stormwater from the adjacent Sturt River is diverted into the wetland, where natural processes clean it. Cleaned water is injected into the deep aquifer under the wetland for storage over winter. In summer, the stored, treated water is pumped out to irrigate council reserves through a dedicated underground pipe network.

At full capacity the scheme is expected to provide up to 200 ML of stormwater for the irrigation of up to 31 council reserves, replacing mains or groundwater use or creating new irrigated areas.



Green streets and flourishing parklands

Green streets, urban parks and Adelaide's iconic parklands provide much more than a pleasant environment to live in. They contribute to the economy, biodiversity and improve the health and wellbeing of our community by cooling our growing city. Its goal is to increase tree canopy cover and generate the green spaces our communities and wildlife need.

More people live in apartments or houses with small or no back yards. Green streets and flourishing parklands will become more important in reducing urban heat build-up, providing an essential wildlife habitat and offering places for recreation.

Urban greening plays a critical part in protecting people and property from extreme weather events such as heatwaves and storms.

Urban heat mapping has identified hotspots in the metropolitan area. They generally have fewer green spaces, trees, shrubs and grass and can be up to 3-4°C hotter on sunny days.

An increase in impermeable surfaces (roofs, roads, pavements) in residential developments puts neighbourhoods at greater risk of flooding as rain and stormwater are less easily absorbed.

It is vital that the water sensitive urban design and the green streets and flourishing parklands key priorities are strongly linked and, in partnership with local government, embedded into planning and development at every scale.

The government's commitments to create Glenthorne National Park and open up reservoirs, as well as establishing the Greener Neighbourhoods fund, are all part of Adelaide's ambition to become an ecologically vibrant National Park City.

Green Adelaide will:

- » Partner with local government to build on existing urban heat island mapping to produce a map of Adelaide that identifies priority areas for greening, green infrastructure and water sensitive urban design action.
- » Fund and provide grants to local government to deliver greening outcomes in public spaces, including through the Greener Neighbourhoods grant program.
- » Influence new building designs to support an urban landscape with tree canopy cover and biodiversity habitat.



Average canopy cover for urban South Australia in 2016 was 19.5%, down 1.9% from 21.4% in 2013.

Source: 2020 Vision



Spending time in urban green spaces can increase levels of social connection and wellbeing, as well as reduce depression and anxiety.

Takayama et al 2014.



Metropolitan Adelaide has 43.2% hard surface cover and 56.8% green cover

43% of urban LGAs have had a significant loss in tree canopy cover

Source: 2020 Vision

An Australian study found that residents in neighbourhoods containing greater than 20% green space were significantly more likely to walk and participate in moderate to vigorous physical activities on at least a weekly basis.

Astell-Burt et al 2013.





Biodiversity sensitive and water sensitive urban design

Biodiversity sensitive and water sensitive urban design is integral to creating attractive and sustainable urban living and creating crucial habitat for wildlife.

Biodiversity sensitive urban design seeks to build nature into the urban fabric by linking urban planning and design to the basic needs and survival of native plants and animals.

The principles of biodiversity sensitive urban design are intended to address the negative impacts of urban development on biodiversity and aim to create onsite habitat, promote ecological processes and encourage positive human-nature interactions. Biodiversity sensitive urban design takes a different approach to traditional urban biodiversity methods by striving to integrate nature into the built form through thoughtful planning. Examples include a reduced footprint to allow for more vegetated space, providing habitat and lessening barriers to movement for animals. Green roofs and habitat walls provide habitat for native birds and insects.

Water sensitive urban design brings together the management of water from all sources – stormwater, wastewater, rainwater and groundwater - to achieve secure and sustainable water supplies for our urban communities and economy.

Green Adelaide will drive an integrated approach to water resources management

so that issues and opportunities are planned holistically, enhancing overall urban liveability.

Urban and natural environments contribute to improving water security and quality. Actions such as incorporating water sensitive urban design into new developments and retrofitting it into existing areas help to reduce the impact of population, economic and housing growth on our water use. Examples include raingardens located along suburban streets and harvesting and reusing stormwater.

The flow of water is fundamental for healthy urban green spaces. As temperatures increase and rainfall decreases, more water will be needed to sustain urban green spaces. Water sensitive urban design can reduce our reliance on drinking water for irrigation and help keep our streets shady, green and cool.

Leadership from Green Adelaide will help drive biodiversity sensitive and water sensitive urban design action, and influence planning and development at every scale to ensure Adelaide is liveable, sustainable, productive and resilient to the future challenges of a warming climate and increase in urban density.

Green Adelaide will:

- » Partner with state and local government, the planning system and Water Sensitive SA to proactively encourage policies to embed greening, biodiversity sensitive and water sensitive urban design into private and public planning and development at every scale.
- » Provide grants to local government and other third parties to deliver more water sensitive urban design action across the region to support greening, cooling and climate resilient outcomes.





Controlling pest plants and animals

Adelaide has diverse environments rich with wildlife, but many pest species have been introduced over time. The effective management of pest plants and animals is critical to the long-term survival of native species.

The responsibility to manage pests is now shared between landholders, government, commercial enterprise and the broader community. Consideration will need to be given to how this is best managed.

The behaviour of urban communities in relation to pest plants and animals can impact on both metropolitan and rural areas through spreading plants and releasing birds and animals into the wild and potentially causing significant economic, environmental and social impacts.

Pest plant and animal control will need management actions, educational programs and collaborative partnerships to ensure the management of invasive species.

Green Adelaide will:

- » Oversee a pest animal and species strategy and provide grants to third parties to deliver on-ground outcomes.
- » Undertake compliance-related activities in partnership with the Department for Environment and Water and the neighbouring Landscape Boards, the Department of Primary Industries and Regions and local government.





Nature education

Inspiring a love of nature is fundamental to it being valued by the community and preserved for generations to come. When people connect with nature from a young age, it brings developmental, health and emotional benefits. It can also nurture future advocacy and an active desire to protect our precious natural environment and native species.

Hands-on experiences discovering the outdoors and nature, together with a great school education, will create our environmental stewards of the future. The success of programs like NRM Education and Nature Play provides the platform for Green Adelaide to build on the work already happening within schools and urban communities.

Community wellbeing comes from knowing why and how to get involved. Sustainability programs for adults and families will help connect people to nature.

Green Adelaide will:

- » Partner with community, businesses and government to deliver a nature education strategy that builds on existing activities and programs, such as nature education, volunteer support, community-run natural resource centres and urban sustainability and coastal ambassador programs.




“strongly believe that what (they) personally do makes a difference to the environment”

Source: 2016 AMLR Survey South Australians and the Environment



in the community as a result of school initiatives reported by 50 teacher survey responders (2017 teacher survey).

In 2017, the NRM Education program engaged with **436 schools** and preschools across the AMLR region, with **40,419 individuals** participating in events supported by NRM Education. 





Fauna, flora and ecosystem health in the urban environment

Maintaining and enhancing Adelaide's unique, biologically diverse natural environment provides clean air, water and land, helps build resilience to climate change, contributes to the economy and supports the lifestyle we enjoy.

Green Adelaide will create green corridors to link the Mount Lofty Ranges from the city to the ocean.

A strong focus on greening the city, improved coordination across the private and public realm and an integrated urban water system provide the opportunity to grow and create more habitats for native birds and animals across the urban area.

Spaces supporting habitat must be integrated and connected across neighbourhoods and landscapes.

It is not just about creating new open spaces, but also about maximising existing ones such as rooftops and the spaces between and around buildings, and then connecting them to create wildlife passages throughout the city. This will allow over 1080 different plant species, 300 birds, 60 fish, 40 mammals and more than 45 reptiles within the Green Adelaide region to continue to flourish.

While we value our native fauna we also know it can pose a problem in urban areas. A joint effort by urban residents, natural resource managers, local government and

non-government organisations is needed to better understand and manage, mitigate or promote human-wildlife interactions, maximising the benefits of living with wildlife.

Green Adelaide will:

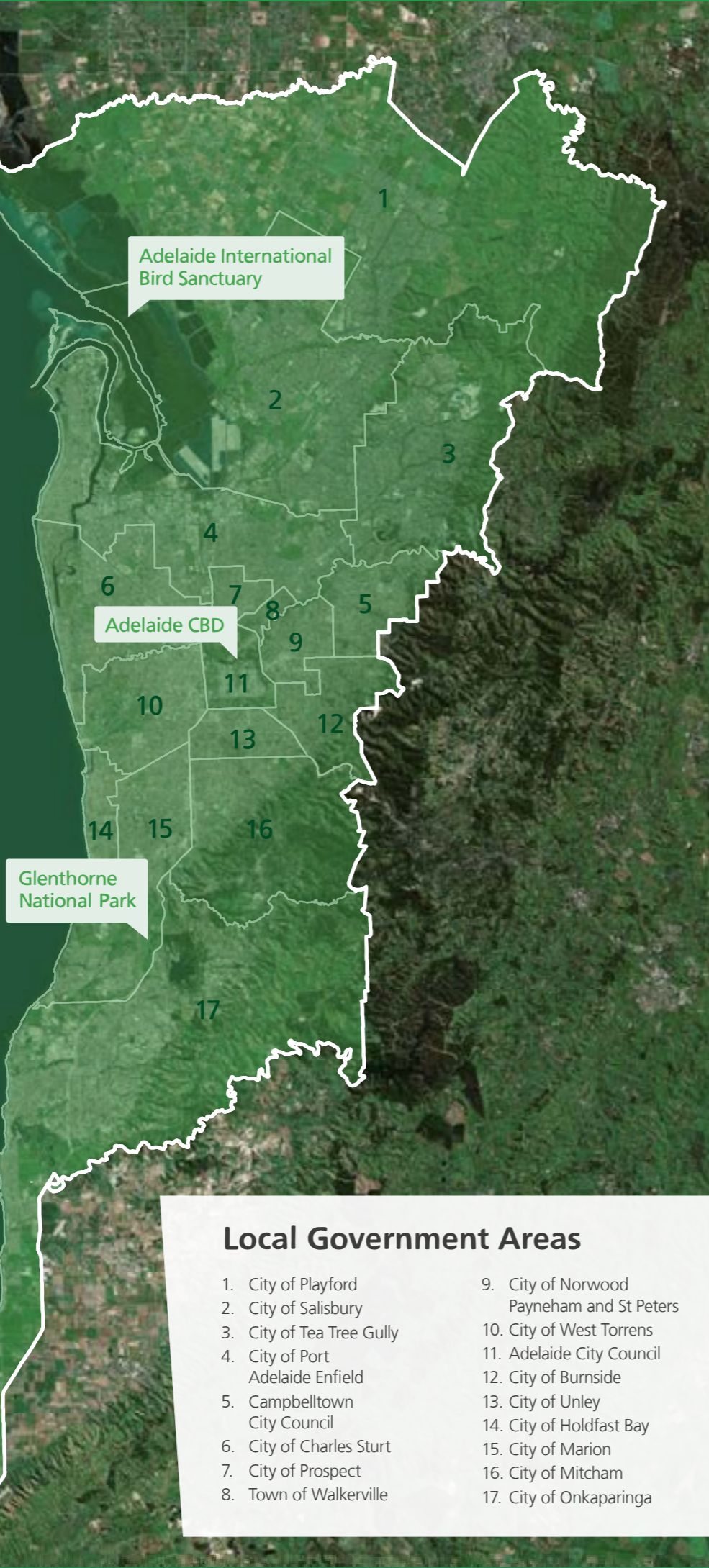
- » Aspire to create a National Park City through protection and creation of habitat to promote urban ecology and biodiversity.
- » Fund local government and provide grants to third parties to deliver practical on-ground projects that support and create more habitat for birds and animals across the urban area.
- » Engage and support community activities, which could include more bee hotels, lizard lounges and butterfly gardens.
- » Oversee the management of abundant species in the urban environment and continue the development of strategies to reduce the problematic interactions between fauna and urban communities.



Green Adelaide boundary

The Green Adelaide region recognises communities of interest rather than strict catchment areas, but will involve partnerships with neighbouring landscape boards. The boundary takes in the urban footprint of metropolitan Adelaide, including areas identified for future urban growth through the planning and development system.

A portion of the City of Onkaparinga is included within the southern reaches of Green Adelaide, with the rest forming part of the Hills and Fleurieu Landscape Board.



Local Government Areas

- | | |
|----------------------------------|----------------------------------------------|
| 1. City of Playford | 9. City of Norwood
Payneham and St Peters |
| 2. City of Salisbury | 10. City of West Torrens |
| 3. City of Tea Tree Gully | 11. Adelaide City Council |
| 4. City of Port Adelaide Enfield | 12. City of Burnside |
| 5. Campbelltown City Council | 13. City of Unley |
| 6. City of Charles Sturt | 14. City of Holdfast Bay |
| 7. City of Prospect | 15. City of Marion |
| 8. Town of Walkerville | 16. City of Mitcham |
| | 17. City of Onkaparinga |

Partner programs

More than half the world's population is urban and 90% of all urban areas are coastal, like Adelaide. From a global to a local scale, our future prosperity, the liveability of our cities and towns, the health and wellbeing of our communities and the resilience of our built and natural environment all depend on how well we address the challenge of climate change.

The inclusion of Carbon Neutral Adelaide and Greener Neighbourhoods programs within Green Adelaide will support our response to climate change impacts.

Greener Neighbourhoods

The government's \$2 million Greener Neighbourhoods commitment will provide grants to local government to support projects that increase tree canopy and green cover and lead to on-ground benefits for local neighbourhoods and communities.

This will help to reduce the urban heat island effect, enhance visual amenity, provide health and wellbeing benefits, and create habitat for wildlife in metropolitan Adelaide.



Carbon Neutral Adelaide

Carbon Neutral Adelaide is a collaboration between the State Government and City of Adelaide to make Adelaide the world's first carbon neutral city. The program's focus is on reducing emissions through energy-efficient buildings and infrastructure, zero emissions transport, renewable energy generation and reducing emissions from waste and water.

The Carbon Neutral Adelaide Partner Program acknowledges that state and local government needs partnerships and community action to achieve these objectives. There are almost 160 partners and the program engages with more than 1800 individuals, businesses and other groups.



Green Adelaide Board

The Green Adelaide Board will be an expert, skills-based statutory board of up to 10 members appointed by the Minister for Environment and Water.

High-level and influential, its members will bring the skills, qualifications, knowledge and experience required to influence and partner with state and local government, statutory entities and non-government organisations to drive innovative reform across the urban environment.

The board will prepare and administer the delivery of a five-year Green Adelaide Plan.



For more information go to:
www.environment.sa.gov.au/green-adelaide



With the exception of the Piping Shrike emblem, and other material or devices protected by Aboriginal rights or a trademark, and subject to review by the Government of South Australia at all times, the content of this document is licensed under the Creative Commons Attribution 4.0 Licence. All other rights are reserved.

© Crown in right of the State of South Australia
Revised January 2020, to incorporate revised priorities only | FIS 95422

