

Port Augusta - Quorn District Plan

2022 - 2024



January 2022

Introduction

The Port Augusta – Quorn (PAQ) district is a recent addition to the SA Arid Lands Landscape region, as of July 2020, and includes diverse landscapes and communities. The new district stretches from Cultana on the Eyre Peninsula to Port Augusta, and follows the range from Mt Brown, north, through the Arden Vale ranges.

Geographically the area of 538,000 hectares is characterised by parallel ranges and gorges, a mixture of plains and tablelands at the head of the Spencer Gulf, and 122 kilometres of coastline and coastal habitat. The diverse landscape supports productive agricultural grazing and marginal cropping, rich biodiverse habitats and vibrant towns with a total population of 15,000 residents in the district.

Linked bioregions

A bioregion is an ecologically and geographically defined area with common characteristics such as geology, landform patterns, climate, ecological features and plant and animal communities. The district falls within the boundary of two bioregions:

- **Gawler** – extensive plains overlain by dunes and interrupted by granite and rocky hills and large salt lakes.
- **Flinders Lofty Block** – mountain ranges, ridges and wide, flat plains with vegetation types related to landforms. Eucalypts on hills and ranges that receive higher rainfall, mulga in drier areas and sparse low shrubs or spinifex on stony areas.

Size: 5380km² (1% of the SAAL region)

Towns (population): Port Augusta - 13,862 and Quorn - 1,230 (approx. 60% of the SAAL region)

Aboriginal Nations: Nukunu Nation (along the eastern coast and ranges); Barngarla Nation (along the western coast)

Land use: Grazing, marginal cropping, mining and renewable energy, tourism, horticulture, conservation (public and private lands), recreation, service centres, towns

Ecological communities: Seagrass beds, mangrove forests and samphire shrublands in inter-tidal areas and salt lakes, supporting diverse communities of marine invertebrates, crustaceans and fish. Open plains and dunes contains arid shrublands and open woodlands. Temperate woodlands restricted to peaks and slopes of ranges with either a densely shrubby understorey or a more open grass understorey. Mallee vegetation occurs in northern areas around Quorn, while the western side of the Upper Spencer Gulf has bluebush and saltbush shrubland and some black oak near watercourses. Major ephemeral creeks support river red gum woodlands and small tributaries and creeks are lined with mallee, native pine or gum-barked coolabah.

Climate: The climate is strongly influenced by the topography of the main ranges with annual average rainfall in high altitude areas up to 600 mm while the northern plains country receives less than 200 mm. The region is prone to periods of drought which have occurred with relative regularity since records began.

Major landforms: 1) parallel ranges and valleys with steep gorges and rocky outcrops; 2) extensive Willochra Plain with the Willochra Creek flowing north and west through to Lake Torrens; 3) coastal plains of the Upper Spencer Gulf.

Soil types: Calcareous soils (32%) predominantly on the plains, are well drained, except when overlying clayey subsoils, and can be excessive in deep soils with light textured subsoils. Hard red-brown texture contrast soils over alkaline subsoils (30%) predominantly on the plains and low hills. These soils are firm to hard loamy sands to clay loam surface soils over red or brown sandy clay loam to clay subsoils. Shallow soil on rock (24%) on and near the ranges, and generally unsuitable for cropping.

History of issues: The distribution and quality of native vegetation has been greatly impacted by cultivation and grazing, resulting in its replacement by annual and short-lived species leading to increased vulnerability to erosion. Introduced carnivores, including foxes and cats, have led to local animal extinctions including Western Quolls and Brush-tailed Bettongs, and resulted in a number of endangered species including Brushtail Possum, Yellow-footed Rock-wallaby, Carpet Python, Lace Monitor and Short-tailed Grasswren. Scalding or bare-ground is a land management issue for some areas of the district. The establishment of farm dams during the last century has also contributed to altered water flows.

Catchment and key waterways: 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.

National Parks and Reserves: Upper Spencer Gulf Marine Park, Winninowie Conservation Park, Mt Brown Conservation Park, Dutchman's Stern Conservation Park, Buckaringa (Australian Wildlife Conservancy)

Key stakeholders:

- First Nations organisations, including Nukunu Wapma Thura Aboriginal Corporation, and Barnjarla Determination Aboriginal Corporation
- Port Augusta City Council and Flinders Ranges Council
- National Parks and Wildlife Services (NPWS)
- Australian Arid Lands Botanic Garden
- Australian Defence Force at Cultana Training Area
- Town dwellers of Port Augusta and Quorn
- 11 local schools
- Industry and businesses
- Conservation organisations
- Landholders including the agricultural community
- Community and volunteer groups

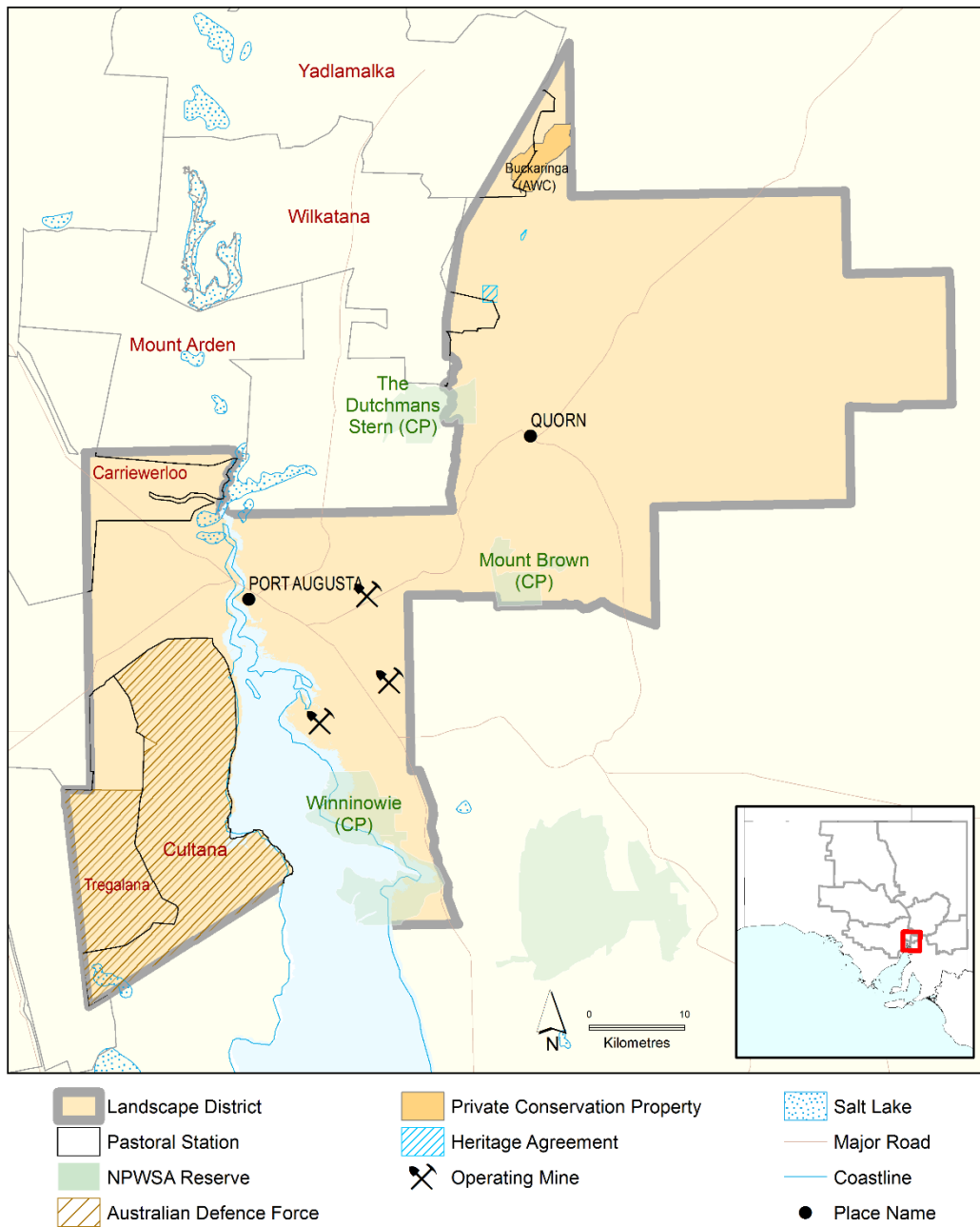


Figure 1: Map of the Port Augusta – Quorn district

Role of the Board

Under the Landscape South Australia (LSA) Act 2019, the Board's role is to undertake, promote and integrate the management of natural resources. Particular reference is given to land management, water resource management and pest animal and plant control. The Board operates as the relevant authority for a range of water, land protection and animal and plant control activities and works with the community in delivering its responsibilities under the LSA Act. Its roles include education and awareness raising aimed at practice change and adoption, encouraging and supporting legislative compliance, and enforcement when needed.

Role of the Port Augusta - Quorn Landscape Group

Landscape Groups are an important conduit for community input to landscape planning and design of the Board's programs. Groups work with local communities, to support the implementation of the Regional Landscape Plan and increase community awareness of Board programs within a Group's area.

Landscape Planning Framework



How this plan was developed

This plan was developed through a series of planning sessions with the Port Augusta – Quorn Landscape Group in 2021. Information was drawn from past planning documents, current projects and stakeholder knowledge.

Monitoring and Evaluation

This district plan will be reviewed each year with the Port Augusta - Quorn Landscape Group to evaluate progress against priorities and plan for the next year of activities.

VISION

Leading the way to biodiverse and productive landscapes in a changing climate

SA Arid Lands regional priorities

Priorities

Focus areas



CLIMATE RESILIENT REGION

Resilient landscapes, communities and enterprises are mitigating and adapting to climate change

- C1** Ensuring climate risk is embedded in all Board business
- C2** Providing land managers with the knowledge and skills they need to mitigate and adapt to climate change
- C3** Exploring adaptation pathways to ensure communities are climate resilient



WATER MANAGEMENT

The region's water resources are managed judiciously

- W1** Planning, research & leveraging infrastructure investment to support the judicious use of groundwater
- W2** Maintaining hydrogeology to protect Great Artesian Basin springs and groundwater-dependent ecosystems
- W3** Understanding and managing surface water systems including the Lake Eyre Basin



SUSTAINABLE LAND MANAGEMENT

Land management practices protect soil, vegetation and biodiversity

- L1** Effective pest plant and animal control protecting production systems
- L2** Addressing the threat of excessive total grazing pressure
- L3** Building land managers' capacity in adaptive agriculture, best practice land management and rehabilitation



PROTECTING AND ENHANCING BIODIVERSITY

Intrinsic biodiversity values are protected and enhanced

- B1** Managing key threats to protect natural values
- B2** Taking action for threatened species and ecosystem recovery
- B3** Maintaining and improving the condition of Great Artesian Basin springs and water-dependent ecosystems












PEOPLE AND PARTNERSHIPS

People and community are central to looking after our landscapes.




- P1** First Nations partnerships supporting cross-cultural knowledge sharing and landscape management outcomes
- P2** Supporting Landscape Groups to lead community action and education
- P3** Raising awareness of the region's natural values and connecting people to nature
- P4** Supporting community action to achieve land, water and coastal management outcomes


PAQ District priorities for landscape management


Priorities*	Landscape impacts	District Ranking [^]	Alignment to Regional Priorities**
Industry Development Impacts	Vegetation clearance by industry and urban developments such as mining, pastoralism, energy and infrastructure, decrease biodiversity and disrupt ecosystem processes. Revegetation can increase habitat, vegetation connectivity, and restore ecosystem processes in marine, coastal, riparian, plains and ranges habitats.	High	
Total Grazing Pressure, Erosion and Landscape Rehydration	High levels of total grazing pressure including livestock, overabundant native herbivores and introduced herbivores lead to loss of biodiversity and ground cover, and increased erosion. Landscape rehydration improves carbon stocks and soil biological activity for drought resilience, which benefits production, biodiversity and carbon sequestration.	High	
Mitigating and adapting to climate impacts	Climate change predictions for the district are for lower rainfall, higher temperatures, higher salinity (marine). Mitigation and adaptation options (including carbon offsets and diversification options) are a focus to reduce the impacts of climate change on community.	Med	
Weed Control	Weeds displace native vegetation with flow-on effects for native fauna and impact on stock management/pastoral production.	Med	
Feral Predator Control – Fox and Cats	Predation by foxes and cats results in loss of native fauna and also impacts livestock, particularly lamb mortality (foxes).	Med	
Rubbish and Pollution	Illegal dumping and poor waste water treatment ends up in the Upper Spencer Gulf waters, impacting local coastal and marine biodiversity.	Med	
Nature and Cultural Knowledge and Awareness	Supporting greater knowledge and awareness in the younger generation about the importance of local culture and biodiversity through school programs can create responsible practices	Med	
Supporting Community Action	Builds community capacity and community-led action through grants and events.	Med	
Water Over Extraction	Over extraction or diversion of ground and surface water can affect other water users and environmental health, including the condition of water dependent ecosystems. Water affecting activities are regulated by the Board. Sustainable water use is a focus for the Group.	Low	

[^]Priority ranking considers the **magnitude** of the threat or opportunity (how **severe/influential** and how **widespread/ relevant**) it is, as well as the **reversibility** of its impacts.** Some district priorities may not be regional priorities for the Board.

PAQ District - Current programs and opportunities

Issue	District Ranking	Current programs and opportunities	Status	Who	Regional Focus Area
 Climate Resilient Region					
Mitigating and adapting to climate impacts	Medium	<i>Building Pastoral Sustainability Project</i> : Five year federally funded project to build pastoral sustainability and climate adaptation through workshops, property management planning, grants, sticky beak tours, and field days.	Current /2018-2023	SAAL LB	C2/C3
		<i>Blue Carbon opportunities</i> - Regeneration of seagrass, mangrove and saltmarsh habitat through tidal reconnection or other means, providing Blue Carbon credits of interest to industry groups as well as biodiversity benefits.	Current State Program /Potential local opportunities	DEW, SAAL LB, PACC, NWTAC	B1
		<i>Carbon Farming workshops</i>	Potential	SAAL LB, PIRSA	C2/C3
		<i>Land use/Business diversification</i>	Potential	SAAL LB	C2/C3
		<i>Support Adaptation Reports</i>	Potential	SAAL LB, PACC	C2/C3
 Water Management					
Over extraction or diversion of ground and surface water	Low	<i>Water Affecting Activities Control Policy (on-going)</i> - Monitor Water Affecting Activities and promote awareness	Current /Ongoing	SAAL LB	W1
 Sustainable Land Management					
Overgrazing, erosion and landscape rehydration	High	<i>Building Pastoral Sustainability Project</i> – see above	Current /2018-2023	SAAL LB	L2/L3
		<i>Pastoral Plant Guide</i> – Grassroots Grants project	Current /2021-2022	UNFS, SAAL LB	L2/L3
		<i>Perennial Cover Projects</i> – Willochra, Quorn, Port Augusta	Current /2021-2023	Greening Australia, UNFS, Succession Ecology	L3

Issue	District Ranking	Current programs and opportunities	Status	Who	Regional Focus Area
		<i>Kangaroo Management Partnership</i>	Current /2021-2023	SAAL LB	L2
		<i>Property Management Case Studies</i> – revisit past restoration works and show case	Potential	SAAL LB, PAQ LG	L3
		<i>Agricultural Research opportunities</i> – connect with universities to develop projects	Potential	SAAL LB, PAQ LG	L2/L3
		<i>Regenerative Agriculture workshops</i>	Potential	SAAL LB	L2/L3
Weed control (agricultural)	Medium	<i>Weed control – cactus, boxthorn and other</i>	Current /Ongoing	SAAL LB, landholders	L1
 Protecting and Enhancing Biodiversity					
Industry development and vegetation clearance	High	<i>Significant Environmental Benefits (SEB) offsets</i> – promote scheme to landholders	Current /Ongoing	SAAL LB, PAQ LG	B2
		<i>Red Gum monitoring</i> – Saltia Creek	Current /2021	SAAL LB/landholders	B1/B2
		<i>Habitat restoration</i> – Grassroots Grants projects x 3	Current /2021-2022	FRC, SAAL LB, Quorn Landcare	B2
		<i>Threatened species monitoring (flora)</i>	Potential	SAAL LB, TPAG, Quorn Landcare, NPWS	B2
Feral carnivore control	Medium	<i>Biteback wild dog and fox control program</i>	Current /Ongoing	SAAL LB/Biteback team, NY LB, landholders	B1
		<i>Cat control program</i>	Potential	SAAL LB, NPWS, landholders	B1
		<i>Threatened species monitoring (fauna)</i>	Potential	SAAL LB, NPWS, Quorn Landcare	B2
Rubbish and pollution	Medium	<i>Clean Up Days and Awareness Raising</i>	Current /Potential to expand	SAAL LB, PACC, Coastcare, DIT, DEW	B1, P3

Issue	District Ranking	Current programs and opportunities	Status	Who	Regional Focus Area
		<i>USG Water Quality</i> – investigate waste water and industry impacts on gulf water quality	Potential	SAAL LB, Coastcare, SA Water, EPA	B1
Weed control (environmental)	Medium	<i>Weed control – cactus and boxthorn</i>	Current/Ongoing	SAAL LB	B1
 People and Partnerships					
Nature and cultural Knowledge and awareness	Medium	<i>Nukunu Kids Weekends and Healthy Country Planning Workshops</i>	Current/Ongoing	NWTAC, SAAL LB , NY LB, NPWS	P1
		<i>School Nature and Cultural Education Program</i>	Potential	SAAL LB, NWTAC, local schools	P1, P3
		<i>Addressing Inappropriate Visitor Behaviour</i> – support ecotourism ventures and promote appropriate visitor behaviour	Potential	SAAL LB	P3
Supporting community action to achieve land, water and coastal management outcomes	Medium	<i>Landscape Group Meetings and Activities</i>	Current/Ongoing	PAQ LG, SAAL LB	P2
		<i>Community Group Support</i>	Current/Ongoing	UNFS, Quorn Community Landcare and PA Coastcare	P4
		<i>Grassroots Grants for local projects</i>	Current/Ongoing	SAAL LB, FRC, UNFS, PA Coastcare	P4
		<i>Grant Writing Support</i> – promote grant opportunities and provide training and support	Potential	SAAL LB, PAQ LG	P4

PAQ Landscape Group Actions for 2022

District Issue	Opportunity	Actions	When	Collaborate	Status
Climate Resilient Region					
Mitigating and adapting to climate impacts	<i>Blue Carbon Opportunities</i>	1. Presence at cross-agency Blue Carbon Coordination Group state meetings.	Ongoing	1. Dept Env Water (DEW) state team	Ongoing quarterly meetings
	<i>Climate Adaptation Plan Support</i>	2. Locate and identify actions from local climate adaptation plans. Document plan locations.	May 2022	2. Port Augusta City Council PACC	In progress
Sustainable Land Management					
Total grazing pressure, erosion and landscape rehydration	<i>Property Management Case Studies</i>	3. Regional Agricultural Landscape Facilitator, Northern and Yorke Landscape Board and Upper North Farming Systems, Elders and Talking Livestock to identify and manage sticky beak day at Cradock.	March 2022	3. RALF, Living Flinders, N&Y LB, UNFS	Completed Held at Cradock at 4 March
	<i>Building Pastoral Sustainability Project Activities</i>	4. Promote grants and Building Pastoral Sustainability opportunities with local landholders through local networks.	Ongoing	4. Regional Agricultural Landcare Facilitator RALF, CLO, Upper North Farming Systems UNFS	March-June
	<i>Regenerative Agricultural Workshops</i>	5. Support workshop in district in conjunction with RCS workshop. Create local interest in courses.	2022	5. RALF, CLO Resource Consulting Services RCS	Course postponed. RCS promoting within region
Weed control (agricultural)	<i>Weed Control – cactus, boxthorn and other</i>	6. Promote cochineal nursery and peppertree injector to landholders through Quorn Mercury, Transcontinental SAAL Facebook page, cochineal education event, local markets and Quorn Show	Ongoing	6. Sustainable Landscapes (SAAL)	Ongoing.
Protecting and Enhancing Biodiversity					
Feral carnivore control	<i>Fox control program</i>	7. Promote fox baiting initiatives in the district through advertising in the Quorn Mercury with clear contact details to register interest.	Ongoing	7. Biteback staff at SAAL PIRSA	Ongoing since May in the Quorn Mercury

District Issue	Opportunity	Actions	When	Collaborate	Status
Rubbish and pollution	<i>Awareness raising</i>	8. Encourage and support clean up days through Port Augusta Coastcare group	Ongoing	8. Coastcare, PACC	Delayed
		9. Investigate waste water and industry impacts on gulf water quality. Support water monitoring to obtain baseline data.. Meet with EPA and SA Water.	Ongoing	9. EPA	Met in May
Weed control (environmental)	<i>Weed Control – cactus, boxthorn and other</i>	10. Continue release of cochineal on cactus on request from local landholders.	Ongoing	10. CLO (SAAL)	Ongoing
		11. Support working bee at Pithiowie for weed control	Late 2022	11. Quorn Community Landcare	Delayed
		12. Develop district weed strategy	June 2022	12. Sustainable Landscapes (SAAL)	Drafted
Industry development and vegetation clearance	<i>Habitat Restoration</i>	13. Hold restoration workshop/meeting to industry and community	2022	13. Revegetation partners	Delayed
		14. Promote SEB and HAs to landholders (CLO)	Ongoing	14. Revitalising Private Conservation	Ongoing
		15. Promote awareness and protection of marine biodiversity through Port Augusta Coastcare projects	Ongoing	15. PACC, PA Coastcare	Ongoing
		16. Investigate extractive mining operation obligations	Ongoing	16.	Ongoing
People and Partnerships					
Supporting community action to achieve land, water and coastal management outcomes	<i>Grant Application Support</i>	17. Run/promote grant workshops	4 April 2022	17.	Completed
		18. Promote grant opportunities through newsletter and local papers. Promote Grassroots Grants for 2023	Ongoing	18. SAAL staff	Ongoing
	<i>Nature and Cultural Education Program</i>	19. Support Nukunu school holiday events and Healthy Country Planning	Late 2022	19. Nukunu Wapma Thura	Delayed (Covid)
		20. Explore professional development for teachers	June 2022	20. Schools/Other LB/ Nature Play SA	Completed
		21. Work to offer school program and offer grant support	2022	21. Schools	Ongoing
		22. Significant Day events (e.g. Clean Up, Tree Day, Earth Hour)	Ongoing	22. Community	Ongoing
		23. Develop school Holiday opportunities	Oct 2022	23. Quorn Walking Tours	Completed
Diverse community base	<i>Effective communication in the local district</i>	24. Review communications for PAQ district	2022	24.	Ongoing

Prepared by the SA Arid Lands Landscape Board on behalf of the
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