

Foreword



The Kangaroo Island Landscape Board is proud to present the Kangaroo Island Landscape Plan 2021–2026.

There is a strength and resilience that underlies the Kangaroo Island landscape and the people who care for it. Despite the loss of so much from the 2019–20 bushfires, Kangaroo Island is regenerating — the natural environment is re-growing and the community are rebuilding their lives and industries that depend upon it. However, for many this recovery will be an ongoing process that will take many years.

This new Kangaroo Island Landscape Plan 2021–2026 combines community values, local knowledge and scientific evidence into a strategic road map to guide how the Kangaroo Island Landscape Board (the Board) will work in partnership with the community and investors to support the recovery and management of Kangaroo Island's landscapes into the future. It builds upon the Kangaroo

Island Natural Resources Management Plan 2017–2027 that was founded on community consultation, and the extensive community engagement undertaken during the establishment of the new *Landscape South Australia Act 2019* that replaced the *Natural Resources Management Act 2004*.

The Kangaroo Island Landscape Plan aims to strike a balance between productivity/profitability and looking after the environment to maintain biodiversity. There are many challenges currently facing Kangaroo Island but the Board hopes that by working together with the Kangaroo Island community, we can leave the island in a better condition for future generations. The delivery of the Board's activities is dependent on the support of industry, community and all levels of government. To the individuals, industry groups, agency staff and community leaders who have supported the Board and Kangaroo Island, thank you. Our Board looks forward to working with you to implement this plan and secure a healthy environment that supports a diverse and flexible economy and the well-being of our communities, ecosystems, soils and water resources.

Andrew Heinrich

Chair, Kangaroo Island Landscape Board



Minister's endorsement

I, Honourable David Speirs, Minister for Environment and Water, after taking into account and in accordance with the requirements of section 50 of the *Landscape South Australia Act 2019*, hereby adopt the Kangaroo Island Landscape Plan 2021-2026.

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Honourable David Speirs MP Minister for Environment and Water July 2021

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Acknowledgment of Country

The Kangaroo Island Landscape Board acknowledges and respects Aboriginal people as the First Peoples and Nations of the lands and waters on which we live and work and we pay our respects to their Elders past, present and emerging. We acknowledge and respect the deep spiritual connection and the relationship that Aboriginal and Torres Strait Islander people have to Country.

Our island home

Kangaroo Island (KI) is a unique place with diverse natural habitats and is home to numerous species and ecological communities found nowhere else on earth. This thriving biodiversity underpins the health and well-being of the island's community, and successful tourism and sustainable primary production industries.

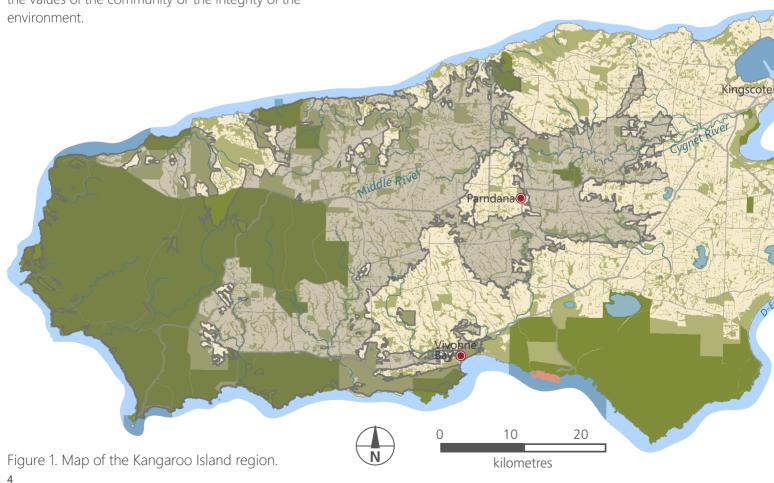
KI is Australia's third largest island (444,000 ha). The landscape varies from high coastal cliffs at the north-western end and a central plateau tilted towards limestone plains and sand dunes along the southern coastline. Just under 50% of the island remains covered in natural habitat, due to low levels of native vegetation clearance, and no rabbits. The island's population of around 4,980 people (Australian Bureau of Statistics 2019), respects and values the diverse flora and fauna that makes KI an international tourist destination.

Kangaroo Island's economy depends on the natural environment with primary industries and tourism accounting for around 90% of gross regional product. This economy needs to be able to respond to the shifts and twists of national and international markets, changing demand for commodities, and pressures from an increasing population, without compromising the values of the community or the integrity of the

2019-20 Khbushfires

In December 2019, multiple fires ignited by lightning joined and burnt 212,000 ha, nearly half of KI. The impacts of the fire have been devastating. Two human lives were tragically lost. There are significant environmental, social and economic implications with substantial losses of native flora and fauna and their habitat, and serious impacts to the major industries, tourism and agriculture and flow on effects to most other businesses including:

- destruction or damage to 91 houses and 297 sheds and outbuildings
- loss of 53.023 livestock
- loss of 96,000 ha of agricultural land managed by 337 farming businesses
- 6,000 ha of forestry plantation burnt
- 131,455 ha of native vegetation burnt and loss of 2,030 km of fencing protecting it
- threatened plant and animal habitat burnt.



Wetlands and watercourses

- KI's water resources provide a public water supply, support industry and recreational activities, and have high aesthetic value.
- There are 5,700 km of watercourses on KI across 53 catchments which generally flow intermittently.
- KI has 15 wetlands of national significance.
- Water quality generally improves from east to west across KI
- Groundwater resources are limited and generally saline on KI.

Coast and marine ecosystems

- Marine habitats include shallow rocky reefs, protected bays with seagrass meadows, deep trenches, estuarine saltmarshes and tidal mudflats, and a nutrient-rich upwelling that generates plankton blooms.
- These habitats support an important and diverse mix of temperate and sub-tropical marine species.
- Seagrass meadows are nurseries for commercially and recreationally valuable fish and invertebrate species and deliver ecosystem services such as sediment stabilisation, nutrient cycling and carbon sequestration.
- KI's coast and marine environment supports a healthy aquaculture industry.



Flora and fund

- There are over 906 different plant species, of which 45 are endemic to KI.
- KI has a higher proportion of native remnant vegetation cover than any other agricultural region in SA
- Eighteen plant species and two ecological communities are nationally threatened.
- KI has a greater diversity of fungi than other regions of SA with over 800 species.
- Western KI is a biodiversity hotspot for flora and fungi.
- Rabbits have not established on KI, enabling a diverse suite of native flora to persist.

Fauna

- KI is home to 221 vertebrate species of native fauna, including 12 nationally threatened species, and is a last stronghold for some of these species. Many endemic and nationally significant species of invertebrates live on KI.
- Many species of terrestrial fauna are threatened by the high densities of feral cats on KI. However, the island remains free of foxes
- KI's abundant wildlife creates a tourism drawcard for KI, sustaining an important tourism industry.

Soil



- Kl's soil is critical for agricultural productivity and natural biodiversity.
- 78% of KI's agricultural soil surface is acidic (below pHCa 5.0).
- Over 48% of KI soil has the potential to be affected by waterlogging.
- 22% of KI soils are affected by water repellance.
- 28% of KI soil is at risk from wind and water erosion.

Heading images above and on following pages from: Euphrasia collina and Correa reflexa: Colin Wilson; Southern emu wren, canola crop and KI echidna: KI Industry Brand Alliance

Challenges facing Kangaroo Island

KI's environment is influenced by a range of threatening processes, some natural and some human-induced. Some of these threats are very localised while others affect the whole region. Some happen quickly, while others take effect slowly over many years. Often these threats are connected and influence each other. The table below describes how threats are challenging KI's environmental assets and what the consequences may be if we don't take action to address them.

A changing climate

The changing climate presents many challenges for KI. The Board is committed to working with our community to support strategies for adapting to the changes, mitigate the impacts and increase regional resilience. The Board will embed climate change considerations and the need to adapt across its priorities and focus areas.

As	set	Ch	aller		
WETLA		RECENT		ess of riparian vegetation that shade watercourses and provide food creased erosion, sedimentation and bank destabilisation of watercou filling many previously permanent pools.	ırses, changing their shape and
NDS A				ecreased water retention in catchments due to increased surface wa reams. ecreased water quality and increased risk of algal blooms due to high	_
Z				leasing nutrients in watercourses. eath of fish, macroinvertebrates and plankton due to low levels of ox	waan in the water
\$	1011			·	, , ,
ATERO		ON-GO		oil erosion and bank destabilisation due to riparian vegetation removereased demand on water supply due to industry developments and restry.	
0		\equiv	i	minished water quality from runoff containing sediments and nutrier	nts.
 		G)		ecreased water quality from feral pig wallowing and livestock access.	
I SE				read of pest plants and animals, altering riparian habitat and negati	vely impacting aquatic biodiversity.
0,			CHANGE	ecreased winter rainfall and more sporadic rainfall events reducing that water-dependant ecosystems.	ne reliability of flows to water users
			19 E	creased storm events, creating flooding and waterlogging.	
			1 ' ' '	gher average maximum temperatures, increasing the rate of evapor	ration and decreasing water supplies.
				ecreased water quality and increased salinity due to reduced flows.	
6		RE(2019-	creased flow of sediments into coastal ecosystems, smothering coast eadows and reefs.	tal plants, saltmarshes, seagrass
AST AI		RECENT	19-20	eadows and reers. sss of coastal dune native vegetation leading to erosion from rainfall,	, wind and tidal events.
		9		troduction and increase of marine pests.	
3		ON-GO		creased nutrients and sediment from run-off resulting in losses of seadiment and increased algae.	agrasses from smothering with
ARINE		NG	i	egative impacts from coastal development on coastal ecosystems.	
	-	٠,		sturbance to shorebirds and coastal raptors from increased tourist v	isitation and coastal development.
ECO	190		CHAI	arming and acidifying oceans, impacting on marine species and thei	ir habitats.
S	33		HANG	sing sea levels, causing inundation and altering coastal habitats.	
LS			NGE	troduction of new pests/diseases that alter habitat and/or compete f	
EMS				arming ocean temperatures expanding the habitat range for sub-tro bitat range for temperate cool water species.	
				creased sedimentation and nutrient run-off into near shore marine s id rainfall events.	
				creased major storm surge induced flooding events resulting in incre ff erosion, loss of sandy beaches and threats to infrastructure.	
	of the			creased flooding inundation leading to expansion of coastal tidal sal	tmarsh ecosystems.

Climate challenges

KI predictions for 2100 compared with data from 1986–2005

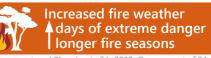




Asset	Ch	alleng	ges
FLORA ANI	RECENT	2019-20	131,455 ha of native vegetation burnt, including over 38,000 ha within the agricultural landscape. Reduced ability for plants to regenerate and potential loss of soil seedbank due to high fire severity.
FUNGI	ON-GO	GENERAL	Increased fire risk as burnt native vegetation is invaded by weeds and introduced grasses.
	ING		Over-browsing from stock, pests and overabundant native species.
		CLIMATE CHANGE	3 1 3
FAUNA	RECENT	2019-20	Death of innumerable native animals during the bushfire. Habitat and food resources burnt, leaving surviving fauna more vulnerable to predators. Threats to nationally, state and regionally threatened fauna, including the glossy black-cockatoo, KI dunnart, KI echidna and endemic invertebrate species. Increased competition for food and spread of disease by feral pigs.
	ON-GOING	GENERAL	Loss of habitat and reduced connectivity through native vegetation clearance. Feral cat predation, with feral cat densities two to ten times as high as those on mainland Australia. Death through collision with road traffic. Diseases impacting on fauna species and their habitats. Competition for resources by introduced pests and overabundant native species. Inappropriate fire management regimes leading to changes to habitat structure and diversity.
		CHANGE	
SOIL	RECENT	2019-20	Loss of pastures/ground covers making soils susceptible to erosion. Competition for regenerating pastures from faster growing weeds.
	ON-GOING	GENERAL CLIMATE	Increasing soil acidity negatively impacting production and environmental health. Overabundant native species grazing crops and pasture. Negative impacts from development, resulting in land use changes. Transmission of disease from feral cats to sheep.
	なるのであれると言うな問題のなる情報	AIF	higher temperatures and less rainfall. Impacts on production from climate variability and extreme weather conditions, causing more heatwaves and drought, and increasing the chance of bushfires. Impact of changing agricultural production to commodities more suited to a variable, altered climate.







Working together

Landscape management is about how we all — individuals, communities, industry and government — work together to ensure our natural resources are used sustainably and the environment remains healthy.

The KI Landscape Board (the Board) was established on 1 July 2020 to facilitate the sustainable management of our region's natural resources, and to promote the formation of long-term and meaningful partnerships to better manage the island's landscapes.

The Board consists of seven members, including a chair. In delivering this plan, the Board aims to:

- support landholders to recover from the impacts of the 2019-20 bushfires
- take action to protect, manage and understand KI's landscapes in partnership with landholders, farming groups, non-government organisations, agencies, stakeholders and community groups
- share information and knowledge with the community and other stakeholders
- continue conversations, listen to and understand each other's views, and openly debate areas of conflict and tension
- empower others through seeking input into decision-making about managing KI's natural resources
- prioritise actions that deliver the greatest benefit from our investments
- seek funding to undertake priority community actions
- evaluate and report on progress to the community
- provide clarity to policy and decision makers in the State and Australian Governments on our community values and natural assets.

Australian Government

The Board works closely with the Australian Government where our priorities align. The Board is the delivery agent for KI through the Australian Government's Regional Land Partnerships program. In this capacity, the Board delivers a suite of projects on behalf of the Australian Government across KI, either directly or via contractors. In addition, the Board also undertakes other projects funded by different Australian Government grant programs.

Purpose of the plan

This plan aims to bring together community values, local knowledge and scientific evidence, creating a framework for the Board to work in partnership with the community to deliver a range of activities to manage the island's landscapes. This plan includes:

- A high-level vision statement that articulates the future that the Board wishes to create together with the community and stakeholders over the next 50 years.
- Five, clear, strategic regional priorities for sustainably managing the region's landscapes over the next 20 years.
- Three focus areas that sit under each regional priority and guide the actions for the Board and the wider regional community over the next 10 years.
- A suite of outcomes below each focus area that indicate what the Board would like to have achieved in five years' time.

An associated **Annual Business Plan** will outline the activities the Board will undertake each financial year to achieve each of the outcomes.

Supplementary documents

A suite of supplementary documents will be developed with further information relevant to this plan.

- The Kangaroo Island Natural Resources Management Plan 2017–2027 contains information about the issues surrounding the management of natural resources and the state of landscapes in the region.
- Developing the Kangaroo Island Landscape Plan will include information on how the regional priorities and focus areas were determined, and the consultation processes that informed the plan.
- Evaluating the Kangaroo Island Landscape Plan will contain information on methods for measuring how successful the Board has been in implementing the Plan, and how successful the Plan has been in maintaining, protecting, improving or enhancing the state of landscapes at a regional and local level.

This plan has been designed to be consistent with the *South Australian State Landscape Strategy* and other relevant planning and strategy documents. Figure 2 contains a diagram showing the interactions between these documents

Landscape plan connections



Figure 2. Where the KI Landscape Plan fits within the policy environment



Our plan on a page

NOISIA Nurturing Kangaroo Island's landscapes together to create a thriving, sustainable future REGIONAL PRIORITIES **ECONOMY COMMUNITY BIODIVERSITY WATER PESTS** Effective water A connected Healthy Sustainable **Effective** terrestrial management community at primary terrestrial and the centre of and marine production and marine pest the island's decision making ecosystems management and biodiversity economy **FOCUS AREAS** Working with Safeguarding Improving the Controlling and, Managing health of the all sectors of the structure water resources where possible, and function soil, water and sustainably and the community eradicating of habitats and biodiversity that to improve equitably for all weeds, pests and the island's ecosystems supports our users landscapes economy Making **Protecting** Strengthening **Improving** Strengthening decisions the viability water quality KI's biosecurity biodiversity to in the island's based on the minimise species of primary arrangements best available loss production catchments and scientific, local through wetlands and traditional sustainable knowledge practices Working in Understanding, Improving our **Protecting** Managing valuing and understanding partnership aquatic the impact of taking care of the with industry biodiversity and overabundant of the natural to ensure the environment ecosystems native species island's economy environment and the and cultural beneficial role it continues to heritage plays prosper











Community

A connected community at the centre of decision making

The KI community has a close connection to the healthy, natural environment that supports its economy, well-being and lifestyle. The Board is uniquely positioned to work with all sectors of the community, across all land tenures, to engage with and support landholders and community groups to understand, value, and take care of the island's landscapes. The Board is also well placed to learn from the community and to make sure that decisions concerning the island's landscapes are made based on the best available local as well as traditional and scientific knowledge. By connecting with the island's community and reacting to the priorities of the environment and the community, the Board aims to create a thriving, sustainable future for KI.

FOCUS AREA	OUTCOME	FUNDING*
Working with all	The Board has continued to support landholders recovering from the impacts of the 2019/20 bushfires.	P
sectors of the community to improve the island's	There has been an increase in the number of students participating in and learning about projects run by the Board.	P
landscapes	There has been an increase in the proportion of the community receiving support from the Board to understand and manage the island's landscapes.	P
Making decisions	Management actions for priority threatened species have been refined based on updated ecological information.	P
based on the best available scientific, local and traditional	The Board has continued to make decisions based on scientific, local and traditional knowledge about KI.	U
knowledge	Accurate and usable data relating to managing KI's landscapes has been collected, stored, and shared with the local and wider community.	P
Understanding,	There has been an increase in the adoption of land management practices that protect or improve natural and cultural assets.	P
valuing and taking care of the natural environment and	There has been an increase in the proportion of the community that understands their rights and obligations to manage native vegetation, including through prescribed burning.	U
cultural heritage	There has been an increase in the number of KI residents participating in events run by the Board.	P

*Funding



Currently funded: The Board currently has sufficient, on-going funding to achieve this outcome.



Partially funded: The Board has funding for 1-2 years and is seeking additional funding to achieve this outcome.



Unfunded: The Board currently has no funding to achieve this outcome, but is actively seeking funding.

























Biodiversity

Healthy terrestrial and marine ecosystems and biodiversity

Kangaroo Island is famous for its natural environment and diverse and abundant wildlife, which attract visitors from all over the world. There are 45 species of plants unique to the island, more than in any other region of South Australia. There are also endemic species of invertebrates and fungi, and distinct island subspecies of mammals and birds. Kangaroo Island has the highest level of native vegetation cover (approximately 48%) of any agricultural region of South Australia, and approximately 65% of the remaining native vegetation is protected under public or private agreements. This diverse native vegetation provides an important refuge for many fauna species that are no longer present on mainland Australia. However, sections of the landscape have been extensively transformed since European settlement, from continuous native vegetation, into a patchwork of native vegetation and cleared agricultural land. Many of the island's species and communities are listed as being threatened at a national or state level, and there are also concerns about the health of many of its ecosystems due to fragmentation and altered fire regimes.

FOCUS AREA	ОИТСОМЕ	FUNDING
	There has been an increase in the extent and connectivity of native vegetation communities, particularly those providing habitat for threatened species.	P
Safeguarding the structure and function of habitats	There has been an increase in the area of native vegetation protected from stock, including areas regenerating after the 2019-20 bushfires.	P
and ecosystems	There has been an improvement in the health of coast and marine habitats around Kangaroo Island, through habitat augmentation and pest control.	P
	60,000 plants have been grown annually at the Kangaroo Island Native Plant Nursery to support native plant revegetation.	P
Protecting	There has been a reduction in the threat posed to native fauna by feral cats.	P
biodiversity to minimise species	There has been an increase in the amount of feeding habitat and the number of safe nesting sites for glossy black-cockatoos.	P
loss	The Board has continued to support the recovery of threatened plant species, including populations impacted by the 2019-20 bushfires.	P
Improving our understanding of	There has been an improvement in our understanding of the distribution, ecology and post-fire recovery of the Kangaroo Island dunnart.	P
the environment and the beneficial role it plays	There has been an improvement in our understanding of glossy black-cockatoo populations, movements, breeding success, and the use of, and carrying capacity of, their feeding habitat.	P
	There has been an improvement in our understanding of the distribution and post-fire recovery of invertebrates and other priority animal species.	P























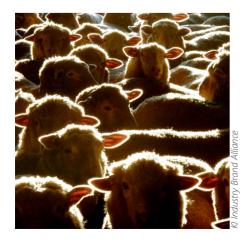


Economy

Sustainable primary production and the island's economy

Kangaroo Island's economy is built on primary production, tourism and a range of supporting services such as health, education and retail. Primary production (sheep for meat and wool, beef cattle, cropping, egg production, horticulture, honey, forestry, viticulture, fishing, aquaculture and others) accounts for nearly a third of the island's economy and manages 70% of the land. This industry relies on healthy soils, clean and adequate water, and the control of pest plants, animals and diseases. Further economic benefits are provided by a healthy natural environment, which also supports the tourism sector. Potential future challenges to primary production and the environment include increases in temperature and the number of days of extreme weather, and decreases in rainfall. Any steps that can be taken now to increase the sustainability, resilience and adaptability of all of our island's industries will help ensure the economy remains strong through these predicted changes.

FOCUS AREA	ОИТСОМЕ	FUNDING
Improving the health of the	There has been an increase in the area of agricultural land managed to improve soil acidity.	P
soil, water and biodiversity that	There has been an increase in the number of primary producers implementing practices to manage soil fertility.	P
supports our economy	There has been an increase in the area of native vegetation planted or protected on-farm.	P
Strengthening the viability of	There has been an increase in the area of perennial pastures grown on KI.	P
primary production through sustainable practices	There has been an increase in the number of primary producers improving water management on their properties.	P
Working in partnership	There has been an increase in collaboration between the Board and other local industry groups, agencies and non-government organisations.	C
with industry to ensure the island's	The Board has continued to prioritise purchasing local goods and using local services to implement Board activities.	C
economy continues to prosper	The Board has continued to work with partners to identify emerging threats, opportunities and priorities for sustainable agriculture on the island.	C

















Water

Effective water management

The health of the KI environment and the viability of its economy rely heavily on clean and adequate supplies of water. Farm dams capture surface water for stock, crops and horticulture, SA Water provides reticulated water from the Middle River Reservoir, while rainwater is used as a source of potable water by about half of the population of the island. Water that is not captured in dams and tanks runs into the 5,700 km of watercourses on the island, nourishing wetlands and estuaries and flowing out to the sea, where it influences the coast and marine environment. Some of these watercourses and associated wetlands are recognised as being nationally significant for the biodiversity that they support. Changes in land use, built structures and land clearance are just some of the factors that can influence the way water flows, and the quality of the water available. It is essential to ensure that this critical resource continues to be able to support the island's economic, environmental, and social needs into the future.

FOCUS AREA	OUTCOME	FUNDING
Managing	The Board has continued to work to ensure that KI's water resources meet the needs of the environment, the economy and society.	P
water resources sustainably and	Water affecting activities have continued to be regulated as stated in the KI Water Affecting Activity Control Policy under the Act.	C
equitably for all users	A hydro-ecological response model for KI has been developed and used to improve how the Board's Water Affecting Activity Control policy is implemented.	C
Improving water	The Board has continued to maintain a longitudinal dataset of water quality in the Cygnet River to inform resource management decisions.	P
quality in the island's catchments	There has been an increase in the area of riparian vegetation planted and protected to improve water quality.	U
and wetlands	There has been an increase in the number of landholders controlling erosion and runoff that decreases water quality.	P
Protecting aquatic biodiversity and	There has been an increase in the number of landholders implementing practices to reduce negative impacts on aquatic biodiversity and ecosystems.	U
ecosystems	There has been an increase in the area of riparian vegetation planted to stabilise watercourse beds and banks.	U

















Pests

Effective terrestrial and marine pest management

Once established in an area, many pest plants, animals and diseases can have significant negative impacts on natural environments and the economy. The most cost-effective way of protecting the island from these impacts is to prevent new pests from arriving in the first place. However, following an incursion of a new pest, significant resources can be saved by detecting and eradicating it early, before it becomes established and begins to spread. For pests that are already established and are causing impacts, careful assessment and planning can enable their control, containment, or even eradication. Further negative impacts to the economy and environment can come from over-abundant native species, that is native animals that adversely affect natural or built environments, people or primary production or other industries. Controlling all pest species is an important part of sustaining both a healthy economy and a healthy natural environment.

FOCUS AREA	OUTCOME	FUNDING
	The Board has continued to support the eradication of feral pigs from KI.	C
Controlling and,	Feral cats have been eradicated from the Dudley Peninsula.	P
where possible, eradicating weeds,	A surveillance program has been established to identify sites potentially infected with <i>Phytophthora cinnamomi</i> .	P
pests and diseases	There has been an increase in the number of landholders who are fulfilling their responsibilities for priority declared species.	C
	The board has continued to implement management actions for priority established and emerging weeds on KI.	P
Strengthening	The Board has continued to support the delivery of the <i>Kangaroo Island Biosecurity Strategy 2017-2027</i> .	P
KI's biosecurity arrangements	The Board has continued to ensure that all landholders with domestic goats, ferrets, and deer are abiding by conditions of their permits.	C
Managing the impact of overabundant native species	The Board has supported the establishment of a koala management program to maintain koala populations at ecologically sustainable levels.	U







