Parks of Western and Central Kangaroo Island

Management Plan 2022

Contents

Minister's Forward 1

Developing this plan 2

Directions for management 4

Significance and purpose..... 9

Challenges and opportunities 12

Management priorities..... 12

Theme 1: Conserving wildlife and ecosystems 13

Theme 2: Maintaining wilderness quality 16

Theme 3: Creating exceptional visitor experiences 18

Theme 4: Managing fire..... 22

Theme 5: Conserving cave and karst features and palaeontological sites 24

Theme 6: Celebrating cultural heritage and history 26

Appendices 28

References 45

Minister's Foreword

The parks and wilderness protection areas of western and central Kangaroo Island protect some of the State's most beautiful natural attractions and wilderness areas.

The 15 parks and wilderness protection areas covered by this plan include more than 115,600 ha of diverse landscapes, including rocky coasts, sandy beaches, estuaries, wetlands, forests, woodland and coastal shrubland. From the smallest park, Mount Taylor Conservation Park (18ha) to the largest, Ravine des Casoars Wilderness Protection Area (41,300ha), each protects natural ecological processes that contribute to a landscape that is valued by Kangaroo Island residents and a drawcard for visitors from South Australia, Australia and beyond.

Making sure we conserve their variety of plants and wildlife while providing opportunities for outstanding natural experiences is a priority for this plan. To achieve this, the management plan contains strategies to protect and conserve wildlife, recover priority species, and maintain ecosystem health, and to ensure park facilities are sustainably designed, constructed and operated with minimal impact on the natural environment.

The 2019-20 bushfires had a significant impact on many of the parks. Wildlife and habitat were impacted and visitor facilities and infrastructure were destroyed. This plan includes strategies for fire management to lessen fire risk, make suppression safer and maintain or improve biodiversity.

I acknowledge the contributions from the Western Kangaroo Island Parks Community Reference Group through the Reimagine Kangaroo Island engagement. I also thank those who helped in the plan's development by making a submission on the draft plan.

I now formally adopt the Parks of Western and Central Kangaroo Island Management Plan under section 38 of the *National Parks and Wildlife Act 1972* and under section 31 of the *Wilderness Protection Act 1992*.

David Speirs MP
Minister for Environment and Water

Developing this plan

The parks and wilderness protection areas of the western and central parts of Kangaroo Island protect areas of significant wilderness and natural beauty including rocky coasts and cliffs, sandy beaches, forests, woodland and coastal shrublands, wild rivers, lagoons and sand dunes. These natural attractions, the wildlife and landscapes, are a key part of the visitor experience on Kangaroo Island.

This plan provides a conservation first approach, giving strategic direction for the protection of the biodiversity and wilderness values of the parks and wilderness protection areas. In addition, it guides the provision of visitor facilities that will create exceptional experiences and directs fire management that will reduce risk to people, property and the environment, and maintain and enhance biodiversity.

The 2019-20 bushfires on Kangaroo Island were the largest in the island's recorded history and burnt 86,720 hectares of protected areas. Wildlife and habitat were impacted and visitor facilities and infrastructure were destroyed. The bushfires also burnt a considerable portion of the island outside of the protected area system, having a devastating effect on the island's community and farming regions.

This plan was developed with input from technical specialists, community leaders and interested members of the public. They contributed their views about the rebuild of visitor facilities following the 2019-20 bushfires and park management directions in a series of Reimagine KI and management planning forums and meetings during 2020 and 2021.

Further community input was sought through public consultation of the draft management plan as required under the *National Parks and Wildlife Act 1972*. Feedback from 158 submissions on the draft plan helped in the finalisation of this plan.

As required under Section 31 of the *Wilderness Protection Act 1992*, the public were invited to make written submissions regarding the matters pertaining to the future management of Ravine des Casoars, Cape Bouguer, Cape Torrens, Cape Gantheaume and Western River Wilderness Protection Areas. Ten submissions were received and these have been considered in the preparation of this draft plan.

Previous management plans for these parks were reviewed and utilised to provide information and direction into the updated plan.

This plan will replace the following plans and plan amendments:

- Seal Bay and Cape Gantheaume Conservation Parks Management Plan (DEHAA 1977)
- Beyeria and Lathami Conservation Parks Management Plan 1992 (DEP 1992)
- Seal Bay Conservation Park Management Plan – Amendment to Plan of Management (DENR 1993)
- Flinders Chase National Park, Kelly Hill Conservation Park, Ravine des Casoars Wilderness Protection Area and Cape Bouguer Wilderness Protection Area Management Plans (DEHAA 2000)
- Cape Torrens and Western River Wilderness Protection Areas Management Plans (DEH 2006)
- Flinders Chase National Park, Kelly Hill Conservation Park, Ravine des Casoars Wilderness Protection Area and Cape Bouguer Wilderness Protection Area Management Plans Amendment (DEWNR 2017)

The plan provides examples of threatened or iconic species to highlight the values contained within these parks. As the plan is set at the strategic level, the intention is not to list all threatened species, but to provide an indication of the conservation values for protection.

Strategies and objectives are provided to guide conservation and management at all scales. The specific actions required to manage the parks in accordance with the plan will be developed and monitored at a park operations level. This approach ensures that the plan is flexible and able to guide a range of future management challenges.

Mapping provided is utilised in the plan to support specific strategies and text. It is not the intention of this document to provide detailed mapping required for operational matters. Mapping indicates the location of zones linked to management strategies and provides the Kangaroo Island Wilderness Trail for locational context. In addition, the location of the Kangaroo Island Wilderness Trail is indicative and subject to change in the future, based on the development of a trails strategy, or operational needs.

Directions for management

This plan sets direction for the management of 15 parks and wilderness protection areas on Kangaroo Island (Figure 1).

South Australia's national parks and conservation parks are managed to achieve the objectives of the *National Parks and Wildlife Act 1972*. These objectives ensure that the parks are managed primarily for conservation, while supporting public use, enjoyment and education about the parks' purpose and significance.

Wilderness protection areas identify and protect areas of the highest ecological integrity, unaffected by modern technology or pest species. The *Wilderness Protection Act 1992* and the Wilderness Code of Management require management with a focus on conservation and protection of biodiversity and the enhancement of wilderness quality. The Wilderness Code of Management supports public use and enjoyment where this is compatible with maximising wilderness quality.

Kangaroo Island is an important part of Creation Stories for the Ngarrindjeri, Kaurna and Narungga People. The First Nations groups' ongoing cultural connection with Kangaroo Island will be shared and celebrated through this plan.

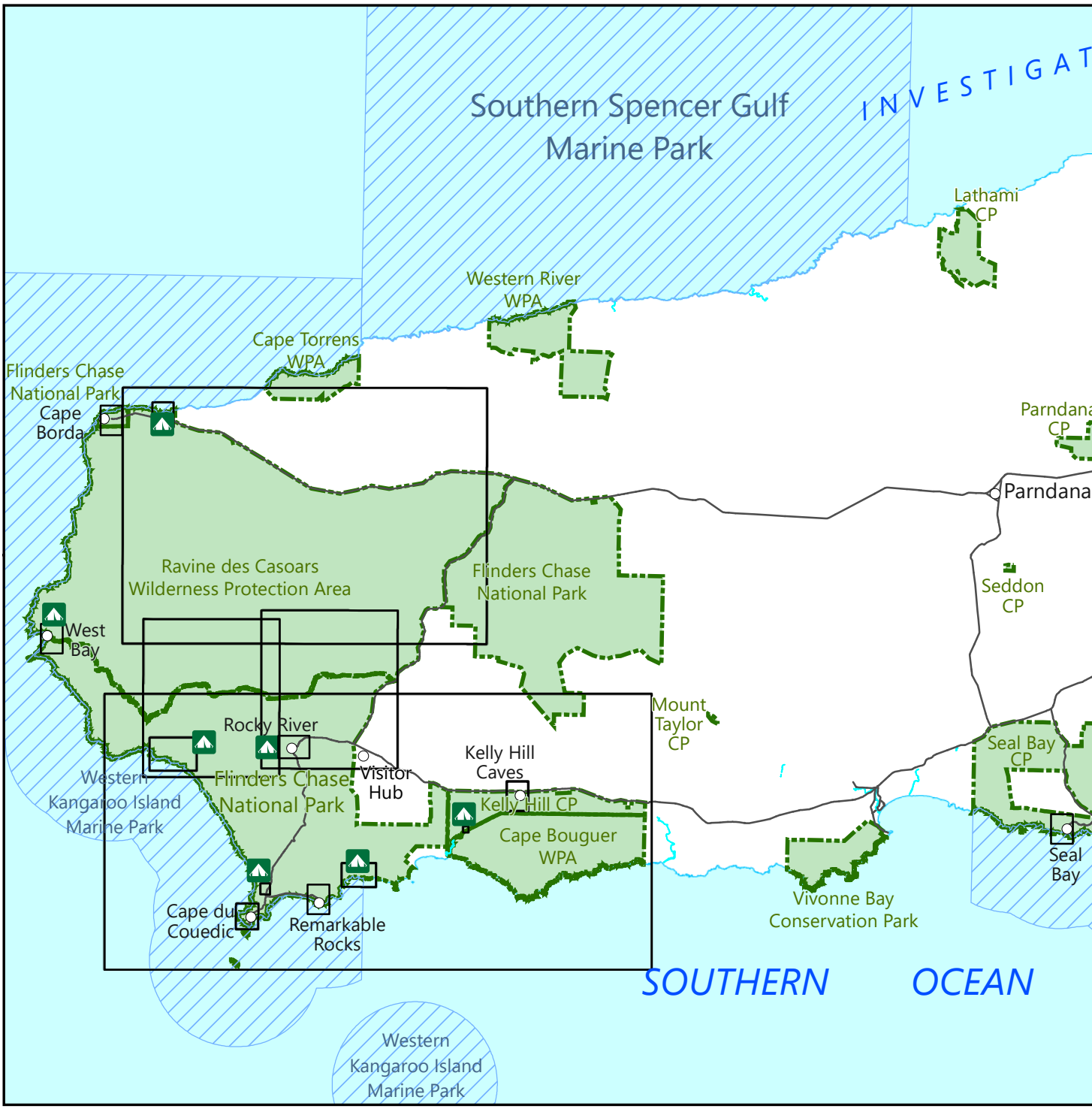
Since the 1900's, many people have been passionate about the protection and conservation of Kangaroo Island's natural landscapes. The participation of the community has been a cornerstone for the conservation of protected areas for many years. This has resulted in strong advocacy for conservation, a significant level of volunteering and a culture of community-based custodianship.

Taking a conservation first approach to the management of native vegetation and vulnerable ecosystems, while balancing this with enabling visitors to experience the natural wonders and wilderness qualities of the island, is a key direction for this plan. This will require the thoughtful siting of facilities to avoid disturbance of areas of high conservation value, to minimise footprints and to ensure the design of built facilities is sustainable and sympathetic to the local landscape.

Section 39 of the *National Parks and Wildlife Act 1972* determines a management plan may provide for the division of a reserve into zones and where a zone is created in a reserve, that the land must be kept and maintained in accordance with the conditions, declared by the plan of management to be appropriate to that zone. The zones set out in this plan are based on this section of the Act to articulate the management visions for the parks and are not related to any zone or layers of the South Australian Planning and Design Code (under the *Planning, Development and Infrastructure Act 2016*). In this plan, the parks are zoned for conservation unless specified otherwise. Defined Visitor Use Zones are linked to specific management plan strategies that outline the type of use and development that can occur in each defined zone. Visitor Use Zones incorporate activities such as tourist accommodation, park visitation infrastructure and campsite areas (including their associated facilities such as toilets, barbecues, and shelters). Where a Visitor Use Zone exists, it is supported by a map and a corresponding strategy that describes the activities envisaged in that zone at that site. Outside these zones, in areas zoned for conservation, visitor facilities are restricted to low impact uses such as picnic areas, walking and cycling trails, and ancillary facilities such as trail heads and trail signage.

The fostering of environmental and cultural interpretation opportunities is promoted in this plan. It can support greater understanding, appreciation and enjoyment of the natural environment, leading to greater community awareness and support for conservation of natural areas. Working with local partners is encouraged through this plan.

The strategies contained in this plan are consistent with the Kangaroo Island Landscape Plan 2021–2026.



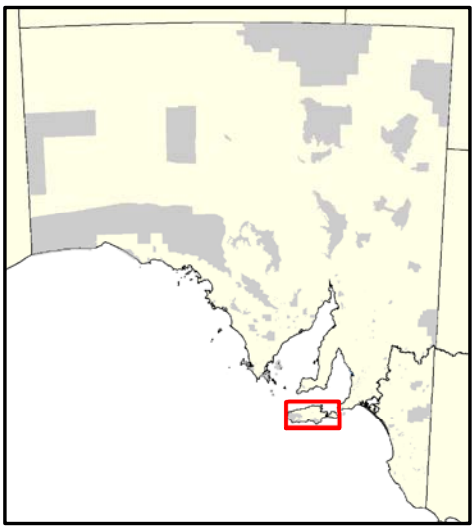
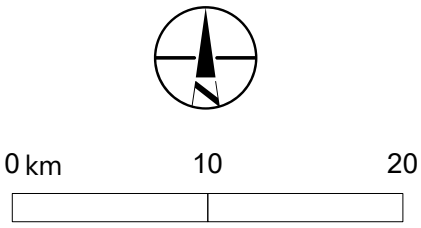
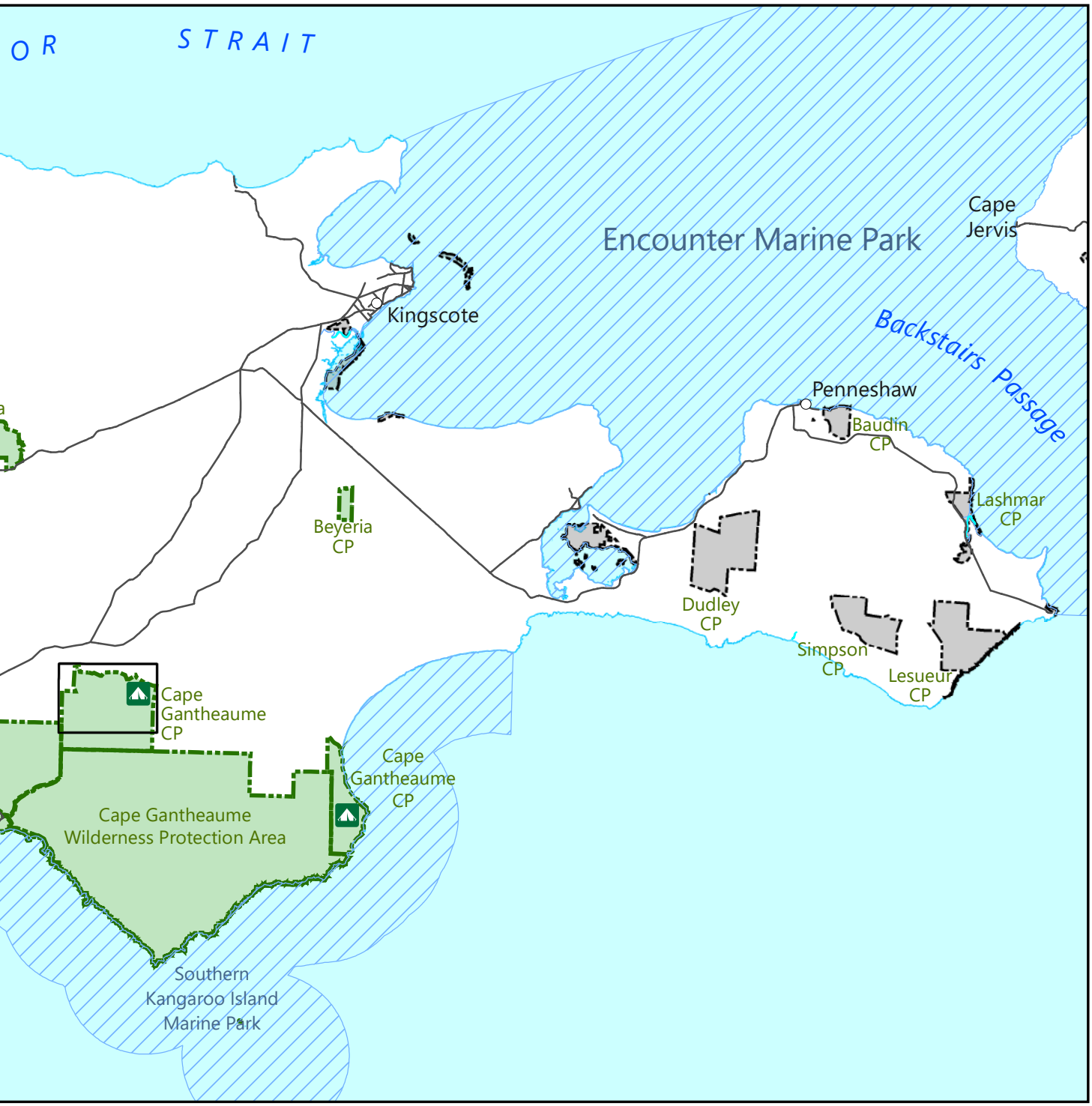


Figure 1

Kangaroo Island Parks





LEGEND

- DEW park of focus
- Other DEW park
- Marine Park
- Main road
- Camping site
- Enlargement map extent

Parks of Western and Central Kangaroo Island

The Kangaroo Island parks and wilderness protection areas covered by this plan are (Figure 1):

- Beyeria Conservation Park (188 ha)
- Cape Bouguer Wilderness Protection Area (5,190 ha)
- Cape Gantheaume Conservation Park (4,260 ha)
- Cape Gantheaume Wilderness Protection Area (20,120 ha)
- Cape Torrens Wilderness Protection Area (1,060 ha)
- Flinders Chase National Park (34,850 ha)
- Kelly Hill Conservation Park (2,190 ha)
- Lathami Conservation Park (1,190 ha)
- Mount Taylor Conservation Park (18 ha)
- Parndana Conservation Park (625ha)
- Ravine des Casoars Wilderness Protection Area (41,300 ha)
- Seal Bay Conservation Park (630 ha)
- Seddon Conservation Park (22 ha)
- Vivonne Bay Conservation Park (1,540 ha)
- Western River Wilderness Protection Area (2,430 ha)

Significance and purpose

Kangaroo Island is one of only 15 Biological Hotspots in Australia (Wildlife Land trust 2018) and is identified as a Key Biodiversity Area (Birdlife Australia). The protected areas in this plan incorporate large areas of connected habitat across the west and central parts of Kangaroo Island. A diverse range of landscapes support natural ecological processes, from low shrublands growing on exposed coastal cliffs, to wetlands fringed with paperbarks, to waterholes and eucalyptus forests. Together these protected areas play an integral role in the conservation of South Australia's biological diversity and natural heritage, and in maintaining the resilience of ecosystems against the effects of a changing climate.

Aboriginal people were the first occupants of Kangaroo Island and evidence of their occupation has been found across the Island including stone tools, middens, campfire hearths and artefacts. The island is of cultural significance to Kaurna, Ngarrindjeri and Narungga People and is part of Creation Stories.

After Kangaroo Island was separated from the mainland, it was not permanently inhabited again for many years until Europeans first visited the area in 1802. Sealers and whalers were the first European settlers, and hundreds of thousands of seals were hunted for their skins. The remoteness, scarce water supply and dense vegetation created tough conditions for settlers. Small farms were established mostly at the eastern end of the island and native vegetation was cleared for grazing and cropping. Farming at the western end of Kangaroo Island was less successful and attempts made to expand pastoral settlements to the west were abandoned (Marsden, 1991). In 1892 attempts were first made to conserve the wildlife of the rugged western end of Kangaroo Island. Flinders Chase National Park was proclaimed in 1919, the second national park in South Australia.

Plants and animals found nowhere else in the world exist on the island, their development aided by thousands of years of isolation from the mainland and the occurrence of natural fire events. With no foxes or rabbits and minimal human interference, protected habitats support nationally threated species including the southern brown bandicoot (*Isoodon obesulus)*, glossy black cockatoo (*Calyptorhynchus lathami halmaturinus*) and Australian sea-lion (*Neophoca cinerea*). A major component of the Kangaroo Island narrow-leaved mallee (*Eucalyptus cneorifolia*) woodland listed as a critically endangered ecological community is protected within the Beyeria Conservation Park.

Extensive cave and karst systems are found in many of the protected areas, with significant palaeontological and archaeological deposits. Most of these systems are undisturbed and in pristine condition.

The protected areas are highly valued by the Kangaroo Island community and visitors who appreciate the significant biodiversity, unique landscapes, extensive wilderness areas, cultural and spiritual connections, and recreation opportunities.

What are we looking after?

- Iconic sites and geological monuments including Remarkable Rocks, Admirals Arch and Seal Bay that are key destinations for visitors to Kangaroo Island.
- A Landscape of connected, intact, and functional ecosystems with an abundance and variety of plants and wildlife.
- Wetlands of National significance including Murray Lagoon, and D'Estrees Bay in Cape Gantheaume Wilderness Protection Area and Grassdale Lagoons in Cape Bougeuer Wilderness Protection Area.
- Scenic, undeveloped country providing an immersive natural experience that encourages people to connect with nature, learn about their surroundings, and support conservation efforts.
- Remote walking trails and campsites that provide access to wilderness areas, allowing people to enjoy an atmosphere of remoteness, ruggedness and isolation.
- Diverse aquatic environments including beaches, rocky shorelines, rivers, wetlands, estuaries and lagoons that provide extensive habitat for aquatic wildlife as well as opportunity for recreation and tourism.
- Endemic and threatened flora and fauna and a critically endangered ecological community.
- The third largest Australian sea-lion colony at Seal Bay.
- European heritage sites that allow people to reflect on and connect to the history of the island since settlement.
- Largely undisturbed karst systems, caves and fossil deposits that provide opportunity for nature-based tourism, research and exploration.
- The land and waters (including artefacts and stories) of Kangaroo Island that are of cultural and spiritual significance to Aboriginal people.

Beyeria Conservation Park

Beyeria Conservation Park protects one of the largest remnants of Kangaroo Island narrow-leaved mallee (*Eucalyptus cneorifolia*) woodland, listed as a critically endangered ecological community. This park is also home to rare plant species including five nationally threatened plant species; small-flowered daisy-bush (*Olearia microdisca*), Beyeria bush-pea (*Pultenaea insularis*), Kangaroo Island spider orchid (C*aladenia ovata*), Kangaroo Island phebalium (*Leionema equestre*) and MacGillivray spyridium (*Spyridium eriocephalum* var. *glabrisepalum*). A short walking trail has been established with an interpretive guide that provides information on the rare and endemic species present.

Cape Bouguer Wilderness Protection Area

Cape Bouguer Wilderness Protection Area contains significant cave and karst landscapes, mallee (*Eucalyptus diversifolia*) woodland and shrubland, sandy beaches, and rocky coastal habitats containing headlands and rock platforms. The permanent freshwater Grassdale Lagoons are listed as a Wetland of National Importance that contribute to Kangaroo Island being a Migratory Shorebird Habitat of National Significance. They provide habitat for numerous endemic and threatened species. Part of the Kangaroo Island Wilderness Trail passes through the wilderness protection area with an extension to Hanson Bay.

Cape Gantheaume Conservation Park

Cape Gantheaume Conservation Park protects Murray Lagoon, the largest body of water on the island with wetland habitat that supports abundant bird life and provides a drought refuge. Murray Lagoon is fed by Timber Creek and is listed as a Wetland of National Importance, contributing to the island being a Migratory Shorebird Habitat of National Significance. The lagoon is fringed by swamp paperbark (*Melaleuca halmaturorum*) shrubland and there are a number of walking trails and viewing platforms.

The eastern section of the park along the coast at D'Estrees Bay is significant for coastal-dependent species such as threatened resident beach-nesting birds, migratory shorebirds and ospreys. Campgrounds at Wreckers Beach, Tea Trees, Big Dune and Wheaton's Beach and one boat ramp are in the park. An old grain threshing floor near Big Dune Campground constructed in the late 1800s is State Heritage Listed. Mallee (*Eucalyptus diversifolia*) woodland and shrubland grows across the inland areas, with small areas of coast beard-heath (*Leucopogon parviflorus*) shrubland. These coastal shrublands and heaths are important habitat and refuges for bush birds, including threatened species and Kangaroo Island endemic sub-species of birds.

Cape Gantheaume Wilderness Protection Area

The Cape Gantheaume Wilderness Protection Area protects a large area of wilderness on the headland of Cape Gantheaume. At the western end, mobile sand dunes are located within the large area of coastal mallee (*Eucalyptus diversifolia*) forest and woodland. Nationally endangered southern brown bandicoots (*Isoodon obesulus*) have been recorded in this protected area. An unmarked coastal trek along the coast provides the only visitor experience.

Cape Torrens Wilderness Protection Area

Cape Torrens Wilderness Protection Area protects 17 rare, endangered and threatened plant species, as well as habitat and food sources for the endangered glossy black cockatoo (*Calyptorhynchus lathami halmaturinus*). The area is currently largely inaccessible, and hence the natural environment remains mostly undisturbed. Ospreys (*Pandion haliaetus*) and white-bellied sea-eagles (*Haliaeetus leucogaster*) nest on the inaccessible, rugged cliffs. There are no visitor facilities.

Flinders Chase National Park

As one of the largest and most popular parks on Kangaroo Island, Flinders Chase National Park covers 41,300 hectares of striking natural features including the Remarkable Rocks, Cape du Couedic, Admirals Arch, Snake Lagoon, West Bay, Cape Borda and the Breakneck River and Rocky River estuaries.

Flinders Chase National Park protects 99 threatened plant species and 37 threatened fauna species and subspecies including the Kangaroo Island dunnart (*Sminthopsis fuliginosis aitkeni)* which is endemic to Kangaroo Island. At Black Swamp and Rocky River, fossilised bones of large, extinct marsupials (megafauna) including Zygomaturus, Diprotodon and Macropus have been discovered and dated to suggest that Kangaroo Island was one of the last refuges for Australia's Pleistocene megafauna.

Platypus were first introduced into Rocky River almost 100 years ago when the island was identified as a refuge for threatened wildlife. They have now spread further across the island to other watercourses. Before the 2019-20 bushfire, the platypus population was estimated at 150 individuals.

The Cape du Couedic and Cape Borda lighthouse precincts and cottages, and Weirs Cove, are listed on the State and National Heritage Registers. Postman's Cottage and May's Homestead are also listed on the Register of State Heritage Items.

Boardwalks, trails, camping, accommodation and picnic facilities, viewing platforms and other visitor infrastructure accompany these sites.

The interior of Flinders Chase National Park is known as Gosselands. The area protects healthy river systems, Burgess Lagoon and threatened flora and fauna including the Kangaroo Island dunnart (*Sminthopsis fuliginosis aitkeni*) and southern brown bandicoot (*Isoodon obesulus*). Dominant vegetation cover includes mallee ash (*Eucalyptus remota*) woodland with eucalyptus (*Eucalyptus baxteri* and *E. cladocalyx*) forest and woodland along watercourses.

The 2019-20 bushfires burnt 96% of Flinders Chase National Park. The lighthouses and keepers cottages were not burnt, but most other visitor areas were damaged or destroyed.

Kelly Hill Conservation Park

Kelly Hill Conservation Park was proclaimed to conserve the significant cave and karst system and fossil deposits under Kelly Hill. The park includes Southwest River, lagoons, wetlands and open mallee vegetation that provide habitat for many waterbirds, rare plants and 22 threatened animal species and subspecies. The park contains walking trails including the Hanson Bay Hike/Kangaroo Island Wilderness Trail which traverses the adjoining Cape Bouguer Wilderness Protection Area. The majority of the park and visitor facilities were burnt in the 2019-20 bushfires.

Lathami Conservation Park

Gum Creek and Deep Gully flow across the plateau of the Lathami Conservation Park, both of which have semi-permanent waterholes and rocky gorges. The park was established to protect an important foraging and breeding ground for the endangered glossy black cockatoo (*Calyptorhynchus lathami halmaturinus*). Aboriginal artefacts have been found on the park. Revegetation has been undertaken across a large area previously leased for grazing.

Mount Taylor Conservation Park

Mount Taylor Conservation Park contains a limestone cave system and largely undisturbed open scrub and open heath vegetation, protecting the rare Tepper's trigger plant (*Stylidium tepperanum*) as well as 14 other threatened plant species. There are no visitor facilities.

Parndana Conservation Park

Parndana Conservation Park protects remnant vegetation typical of the Kangaroo Island plateau including low open forest, open scrub and tall open shrubland, with open forest and woodland along the watercourse. The park supports seven threatened plant species as well as feeding and breeding habitat for the glossy black cockatoo (*Calyptorhynchus lathami halmaturinus*).

Ravine des Casoars Wilderness Protection Area

Ravine des Casoars Wilderness Protection Area was established to protect the outstanding wilderness qualities of the area. Large areas of sugar gum (*Eucalyptus cladocalyx*), stringybark (*Eucalyptus obliqua*) and mallee ash (*Eucalyptus remota*) forest and woodland extend across inland areas including the wild (unregulated) catchments of Breakneck River, Rocky River and Ravine des Casoars. Eighty-eight threatened plant species have been recorded in Ravine des Casoars Wilderness Protection Area. The rugged west coast includes rocky cliffs with low coastal shrubland. Karst landscapes extend several kilometres inland and include a coastal cave at the mouth of Ravine des Casoars River and West Bay Blowhole.

Harveys Return Landing and Harveys Return Cemetery are listed on the National Estate Register and the Register of State Heritage Items. The cliff pathway and associated relics at Harveys Return Landing are suffering considerable deterioration.

Ravine des Casoars Wilderness Protection Area has limited visitor facilities, camp sites and walking trails, and most of the wilderness protection area was burnt in the 2019-20 bushfires.

Seal Bay Conservation Park

Seal Bay Conservation Park is a key breeding site for the third largest Australian sea-lion (*Neophoca cinerea*) colony, that comprises more than 10% of the species' global population. The park is a significant long-term monitoring site for the species and critical to ensuring that ongoing tourism activities are sustainable. The seals use the beaches and sand dunes to rest, give birth and care for their young. The park also protects important ecological communities and a number of rare plant species, including Tepper's trigger plant (*Stylidium tepperanum*).

Seal Bay Conservation Park is an extremely popular visitor attraction with a visitor centre with interpretive displays, picnic facilities, lookouts, trails and boardwalks. It provides a focal point to educate visitors and promote the recovery of the endangered Australian sea-lion. Defined management zones along the coastal section of the park limit access and minimise impacts on the sea-lion colony (Figure 3).

Seddon Conservation Park

Seddon Conservation Park protects remnant vegetation typical of the central Kangaroo Island plateau and was established as an example of the natural state of this region. The Eleanor River and creeks run through the park and support four threatened plant species. There are no visitor facilities.

Vivonne Bay Conservation Park

Vivonne Bay Conservation Park protects a scenic south coast landscape with no public vehicle access or visitor facilities. It contains coastal vegetation, comprising open scrub and open heath, with low shrubland on dunes and cliffs that support threatened flora and threatened birds including the Kangaroo Island southern emu-wren and western whipbird.

Western River Wilderness Protection Area

Western River Wilderness Protection Area protects numerous rare, vulnerable and endangered plant species including the largest surviving remnant of the rare rough barked manna gum (*Eucalyptus viminalis cygnetensis*) on public land. It is home to three nationally threatened plant species, including the rare spiral sun-orchid (*Thelymitra matthewsii*). It also conserves drooping sheoak (*Allocasuarina verticillata*) and sugar gum (*Eucalyptus cladocalyx*) woodland, which provide important habitat and food for the endangered glossy black-cockatoo (*Calyptorhynchus lathami halmaturinus*). The northern coast of the wilderness protection area includes steep coastal cliffs. The southern section forms part of the catchment of Western River which flows into the sea to the east of the wilderness protection area. A walking trail to Billy Goat Waterfall is the only visitor infrastructure.

Challenges and opportunities

Key challenges and opportunities in the protection and management of the parks and wilderness protection areas of western and central Kangaroo Island are:

- Maintaining wilderness quality and the priority conservation values and ecosystems of the protected areas.
- Developing a better understanding of climate change and improving the resilience of ecological communities to temperature increases, extreme fires and decreasing rainfall.
- Improving knowledge of fauna and flora at the species and ecological community level in an effective and adaptive manner to better inform conservation management.
- Minimising the impact of pest animals including cats and pigs, pest plants and Phytophthora to protect threatened wildlife species.
- Supporting ecological communities to survive and thrive within a landscape of bushfire by using learnings and research from past and future bushfire events and prescribed burns.
- Strengthening partnerships with the community, researchers, volunteer organisations and other stakeholder groups to promote engagement in conservation, collaboration and effectively implement this plan.
- Managing the risk of bushfire to the community and biodiversity.
- Assisting in improving the safety of neighbouring residents and visitors in the face of fire, extreme weather and limited access in remote areas.
- Providing outstanding park experiences and facilities to meet evolving visitor needs while remaining sympathetic to and protecting the parks' natural and heritage values.
- Ensuring park management infrastructure and visitor facilities are highly flexible and resilient to both short and long-term changes in visitor use, fire occurrence, climate change and other impacts.
- Providing scope for commercial tourism businesses to develop new nature-based tourism ventures consistent with the natural characteristics and ecological values of the parks.
- Working with First Nations to incorporate knowledge and expertise into the management of the parks and provide appropriate cultural stories for visitors.

Management priorities

This section of the plan addresses the most important issues for the protected areas, focusing on six themes:

1. Conserving wildlife and ecosystems
2. Maintaining wilderness quality
3. Creating exceptional visitor experiences
4. Managing fire
5. Conserving cave and karst features and palaeontological sites
6. Celebrating cultural heritage and history

THEME 1:
Conserving wildlife and ecosystems

Conservation of endemic and threatened species and communities is a priority for park management.

The Kangaroo Island dunnart (*Sminthopsis fuliginosus aitkeni*) is endemic to Kangaroo Island, is listed as endangered and in recent times has been found only in the western parks. It is believed the 2019-20 bushfires burnt 96% of their known habitat. Other threatened and endemic fauna likely to have been significantly impacted by the 2019-20 bushfires include the swamp rat (*Rattus lutreolus*), Rosenberg's goanna (*Varanus rosenbergi*), little pygmy-possum (*Cercartetus lepidus*), and bird species such as the southern emu-wren (*Stipiturus malachurus halmaturinus*), western (white-bellied) whipbird (*Psophodes leucogaster lashmari*) and Bassian thrush (*Zoothera lunulata halmaturina*). The bushfires are also likely to have impacted habitat for threatened invertebrates including the metallic green carpenter bee (*Xylocopa aeratus*), the Kangaroo Island assassin spider (*Zephyrarchaea austini*), and eastern large bronze azure butterfly (*Ogyris halmaturia*).

The endangered southern brown bandicoot (*Isoodon obesulus obesulus*) was once widely distributed on mainland Australia but is now only found on Kangaroo Island and two areas on the mainland of South Australia. The Kangaroo Island short-beaked echidna (*Tachyglossus aculeatus multiaculeatus*) is listed as nationally endangered. Its preferred diet of termites and ants may not have been as affected by the bushfires as other species food supplies and they were seen in bushfire-affected areas within weeks of the fires.

Threats include habitat loss, fragmentation and degradation (including as a result of bushfire), mortality through road kills, and cat predation.

The endangered glossy black cockatoo (*Calyptorhynchus lathami halmaturinus*) is a subspecies found only on Kangaroo Island. These birds feed almost exclusively on drooping sheoak (*Allocasuarina verticillata*) seeds and are highly sensitive to changes in the amount or quality of those seeds. They nest in hollows in large old-age eucalyptus species, mainly sugar gums (*Eucalyptus cladocalyx*), and have a very low reproductive rate. Threats to the glossy black cockatoo include the predation of eggs and nestlings by brushtail possums, loss of drooping sheoak feeding habitat especially through bushfires, and competition with other species, such as galahs and corellas, for nesting hollows.

Threatened coastal raptors found in the protected areas including eastern osprey (*Pandion haliaetus cristatus*) and white-bellied sea eagle (*Haliaeetus leucogaster*) are recognised as environmental indicators. They are particularly sensitive to disturbance during the breeding season and seasonal access restrictions are

implemented in locations across the protected areas to prevent potential disturbance.

The island is also an important area for the threatened beach nesting hooded plover. Contributing to the implementation of actions described in species recovery plans, such as the hooded plover's, will be critical.

Kangaroo Island's flora has many species and subspecies that are unique to the island, it also provides a stronghold for flora species that have largely disappeared from the mainland. The parks contain numerous endemic and threatened plant species including Kangaroo Island phebalium (*Leionema equestre*), small-flowered daisy-bush (*Olearia microdisca*) and Osborn's eyebright (*Euphrasia collina subsp.osbornii*). A major component of the Kangaroo Island narrow-leaved mallee (*Eucalyptus cneorifolia*) woodland listed as a critically endangered ecological community is protected within the Beyeria Conservation Park.

Fauna and flora dependencies are complex. For example, banksia heathlands are important to pygmy possums, honeyeaters, small parrots, yellow-tailed black cockatoos (*Zanda funerea whiteae*) and metallic green carpenter bees (*Xylocopa aeratus*). The threatened small bronze azure butterfly (*Ogyris otanes*) is uniquely dependent on the sour-bush (*Choretrum glomeratum*), the only host plant that its larvae feed on. Many other fauna-flora interactions and dependencies are less understood, but it is important to have a variety of vegetation age classes and biodiversity.

Many of the island's threatened plant species such as the endemic beyeria bush-pea (*Pultenaea insularis*) and the Kangaroo Island turpentine bush (*Beyeria subtecta*) are

restricted to very discrete, small locations in the heavily fragmented remnant vegetation of central Kangaroo Island. Others, such as the endemic twining hand flower (*Cheiranthera volubilis*) have a scattered distribution in the more undisturbed vegetation of western Kangaroo Island.

Successful conservation efforts will require the control of pest plants, pest animals, and phytophthora (*Phytophthora cinnamomi)*. Feral cats pose a huge risk through predation on native animals, and pigs cause erosion through trampling, spread phytophthora, and impact riverine ecosystems by digging over large areas in search of food. Pest plants can cause loss of biodiversity by competing with native plants, impeding their growth and dislocating them from their natural environment. Emerging pest issues as a result of the 2019-20 bushfires such as Tasmanian blue gum (*Eucalyptus globulus*) require a strategy for long-term management and control. Phytophthora is an introduced soil borne pathogen that attacks and destroys native plant root systems, and can be easily spread with human movement on the treads of shoes and vehicle tyres of visitors and park staff. The increased access to the parks requires phytophthora hygiene strategies to be stringently followed to prevent spread.

Where native species are having an impact on ecological values, management may be required to mitigate these impacts. In 1997 the Kangaroo Island Koala Management Program was initiated to reduce the island's introduced koala (*Phascolarctos cinereus*) population to a sustainable level to prevent over-browsing of native vegetation. In 2015 surveys estimated a population of 48,000 koalas. The 2019-20 bushfires had a significant impact on the koala population with an estimated 8,500 koalas remaining on Kangaroo Island. Ongoing monitoring will be required to assess the koala population and its impact on native vegetation to inform future management.

Total grazing pressure should be monitored where required to determine impacts to plant diversity and habitat quality by native and introduced fauna. Control of introduced herbivores is a priority. Where documented evidence indicates that total grazing pressure is unsustainable and impacting the conservation values of the parks, strategic management will be considered for native species such as the western grey kangaroo (*Macropus fuliginosus fuliginosus*) and tammar wallaby (*Macropus eugenii*).

Strategic management should consider non-lethal management actions in the first instance. Where these actions are considered ineffective or not feasible, culling may be implemented where this remains the only practicable method of management. Any culling will follow strict procedures for the humane destruction of animals.

Climate change projections for Kangaroo Island include hotter and drier conditions, with increased risk of bushfires, rising sea levels and increased intensity of heavy rainfall events. Recent modelling demonstrates the extent of potential impacts in Kangaroo Island, including the potential for an annual reduction in precipitation of 10.5% and a 1.5 degree increase in average seasonal maximum daily temperature on 1986-2005 levels by 2090 under an intermediate emission scenario. (Charles, SP and Fu, G (2015))

The impacts of these changing conditions on wildlife and ecosystems are largely unknown, but are expected to include changes in food, water and shelter (habitat) availability, and potentially reproduction success. Supporting research and monitoring is crucial to develop understanding of the impact of climate change and how best to respond to improve the resilience of natural systems.

Monitoring climate change, ecosystems, pest species and other threats, and managing wildlife and visitor access more broadly across the island will be most successful by working with the community and other stakeholders. This includes the Kangaroo Island Landscape Board, universities and environmental non-government organisations. Strong collaboration with Friends of Parks groups and other volunteer organisations, researchers, adjoining land managers and other members of the Kangaroo Island community is a priority. By working together with these groups, their passion, knowledge, experience and resources can be combined to achieve shared conservation outcomes for parks and the island as a whole.

Commercial apiary licenses have historically been granted in selected protected areas on Kangaroo Island. Apiary licences are suspended on sites impacted by fire until the vegetation has recovered to a condition that is likely to support the needs of wildlife and managed honey bees. The 2019-20 bushfires had a significant impact on native vegetation and wildlife across the protected areas and recovery is likely to take a number of years, during which time it is not reasonable for apiary activity to be permitted. Following recovery, apiary licences may be considered on a case by case basis, in accordance with DEW policy.

Apiary sites are not permitted in wilderness protection areas.

Fire management is crucial to conserving island wildlife and ecosystems. Fire management objectives and strategies are described under Theme 4: Managing Fire (page 22).

Visitor numbers to see Australian sea-lions (*Neophoca cinerea*) at Seal Bay have been increasing and visitor management is critical to protect the sea-lion colony and its surrounding sand dunes and vegetation. The monitoring program at Seal Bay is critical to ensuring the sustainable management of the site in the long-term, to arrest population decline, mitigate impacts, and to facilitate population recovery and resilience. Unlike the sea-lions, since the 1990s the long-nosed fur seal *(Arctocephalus forsteri*) population has increased significantly. They now breed at many sites around the island, including Admirals Arch and Cape du Couedic, providing a world class opportunity for visitors to observe these animals. Management zones are defined to restrict access and activity along the coast in the vicinity of major colonies of both seal species.

Objective and strategies

Manage natural areas to conserve wildlife, recover priority species, and maintain ecosystem health.

- Maintain and improve the quality and extent of habitat within the parks for priority species.
- Support monitoring and research that contributes to the conservation of the Australian sea-lion (*Neophoca cinerea*) and guides sustainable management and visitor experiences at Seal Bay Conservation Park, especially during breeding seasons.
- Apply seasonal visitor access restrictions where required to minimise disturbance to sensitive habitat sites and to assist in the recovery of wildlife.
- Conserve and enhance wildlife and ecosystems by monitoring, controlling and where possible eradicating pest animals including feral cats (*Felis catus*) and feral pigs (*Sus scrofa*).
- Conserve and enhance wildlife and ecosystems by monitoring, controlling and where possible eradicating pest plants including bridal creeper (*Asparagus asparagoides*), bridal veil (*Asparagus declinatus*), perennial veldt grass (*Ehrharta calycina*), soursob (*Oxalis pes-caprae*) and phalaris (especially *Phalaris aquatica*), focussing efforts around key ecological and cultural assets/sites and areas of disturbance.
- Develop a strategy for emerging invasive issues activated by the 2019-20 bushfires, such as (but not limited to) Tasmanian blue gum (*Eucalyptus globulus*).
- Continue to promote awareness of and apply phytophthora hygiene strategies to prevent spread of the pathogen through visitor activities and management actions (including fire management).
- Use monitoring and research to inform management and climate change adaptation actions for vulnerable species and ecosystems.
- Monitor total grazing pressure by western grey kangaroo (*Macropus fuliginosus fuliginosus*) and tammar wallaby (*Macropus eugenii*) and implement management programs in response to evidence of adverse impacts to conservation values.
- Apiary licences may be issued in accordance with DEW policy.
- Encourage and work collaboratively with Friends of Parks groups, the Kangaroo Island community and researchers to monitor and manage wildlife and ecosystems to achieve conservation objectives.
- Work with adjoining land managers to limit the impact of neighbouring land uses on wilderness values, wildlife and ecosystems.

THEME 2:
Maintaining wilderness quality

Five wilderness protection areas are covered by this Plan:

- Ravine des Casoars Wilderness Protection Area
- Cape Bouguer Wilderness Protection Area
- Western River Wilderness Protection Area
- Cape Torrens Wilderness Protection Area
- Cape Gantheaume Wilderness Protection Area

The wilderness protection areas were established to 'provide for the protection of wilderness and the restoration of land to its condition before European colonisation' (*Wilderness Protection Act 1992*). Their management is of critical importance and mitigating threats such as pest plants and animals, phytophthora, bushfire, and managing visitor use is a priority in these areas.

Public use and enjoyment of the parks is encouraged and should always be compatible with the conservation of flora, fauna, landscape features and cultural heritage. This involves appropriate management of visitors, tour operators, and infrastructure to protect and improve long term integrity of wilderness quality. If monitoring determines that there is a change in wilderness quality within the wilderness area, actions and controls should be implemented. In addition, pest plant and animals should be controlled and eradicated where possible to support the function and resilience of the sites.

The South Australian Code of Management for Wilderness Protection Areas and Zones requires each management plan to incorporate a Visitor Management Strategy. This is presented on page 17 and provides the detail for visitation at each wilderness protection area, with specific actions for Harveys Return Campground and Scott Cove.

Objective and strategies

Maintain the wilderness qualities of the Cape Torrens, Western River, Ravine des Casoars, Cape Bouguer and Cape Gantheaume Wilderness Protection Areas while also providing opportunities for low impact visitor use and enjoyment.

- Control or eradicate all pest plant and animals that significantly impact on wilderness and biodiversity values.
- Encourage and promote visitors to each wilderness protection area to adopt the Minimum Impact Code for wilderness use in South Australia.
- Maintain existing trails to provide safe walking access through wilderness protection areas consistent with maintaining wilderness quality.
- Maintain existing infrastructure necessary for essential management, ensuring minimal impact on the wilderness values of the protected areas.
- Periodically assess the impact of visitor activities on wilderness values within the wilderness protection area and where required, implement management strategies.
- Provide a new trail and lookout area at Scott Cove (Figure 2) to manage impacts across the site from dispersed visitor activity that is degrading wilderness values (see Visitor Management Strategy pg. 17).

Wilderness Protection Areas Visitor Management Strategy

This section provides the visitor management strategy for Cape Torrens, Western River, Ravine des Casoars, Cape Bouguer and Cape Gantheaume Wilderness Protection Areas as required by the South Australian Code of Management for Wilderness Protection Areas and Zones.

Public use and enjoyment of wilderness areas is encouraged under the code, where this is compatible with maximising wilderness quality.

The Visitor Management Strategy for Cape Torrens Wilderness Protection Area identifies that visitor use is restricted to limited day walks only, due to the inaccessibility of the area and its harsh terrain.

The Visitor Management Strategy for Western River Wilderness Protection Area and Cape Gantheaume Wilderness Protection Area identifies that future use will be:

- restricted to pedestrian access
- conducted in a way which minimises impacts on the environment.

The Visitor Management Strategy for Cape Bouguer Wilderness Protection Area and Ravine des Casoars Wilderness Protection Area identifies that future use will be:

- restricted to low impact visitor activities and vehicle access on existing public access roads only
- conducted in a way which minimises impacts on the environment.

Scott Cove attracts visitors seeking a lookout point to view the coastline. Damage to the environment at Scott Cove since the fires has been caused by a lack of defined walking trails and people creating many opportunistic access points. Construction of a formal trail and a lookout platform is required within the Visitor Use Zone (Figure 2) to protect the area and its wilderness values. This is to focus access to a defined trail and reduce the dispersed nature of current access and damage. New facilities damaged by fire are to be replaced at Harveys Return Campground, including a shelter.

Impacts of visitation on wilderness values include phytophthora spread, walking (off-track), cycling and driving, gas fire and waste management. It can also cause disruption to the pristine landscape, the breeding cycles of sensitive species, in particular coastal raptors, and the tranquil atmosphere.

The wilderness quality must be periodically assessed and, if impacted, strategies must be implemented to better manage the area, both to maintain wilderness quality, and to maintain visitor experience of wilderness, for example through seasonal closures.

Commercial tourism businesses may be granted licences to operate within these wilderness protection areas with frequency and size of groups restricted where necessary to protect wilderness values. Licenced tourism businesses will be required to comply with the Wilderness Code of Management. Unless clearly stated in this plan and supported by mapping, this plan does not authorise the construction of infrastructure in these areas and access is restricted to non-motorised foot access in line with the code, or low impact vehicle access on existing public access roads.

THEME 3:
Creating exceptional visitor experiences

With its rugged coastline, crystal clear waters, natural wonders and wildlife, Kangaroo Island offers extraordinary nature-based tourism experiences. Local, national and international tourists visit the island each year and visitor numbers are projected to increase (South Australian Tourism Commission 2019).

Continuing to provide an exceptional visitor experience creates challenges for protected area management. Visitors come to Kangaroo Island to enjoy the wilderness, views and landscapes, unique flora and fauna, peace and tranquillity - experiences that are relatively "untouched" by humans. Visitor numbers and impacts must be managed to ensure the parks can meet growing demand while maintaining the quality of experiences.

Following the 2019-20 bushfires, opportunities to rebuild and enhance visitor experiences have been identified that are ecologically sensitive and better manage increased visitor numbers. The reconstruction of burnt facilities and establishment of new ones is planned for the next 10 years and these facilities will be designed flexibly to adapt to accommodate future growth beyond this timeframe.

Visitor facilities will aim to anticipate and respond to the changing composition of visitors over time, and their needs and expectations. Extending the network of visitor facilities will disperse visitor load across a greater number of sites, manage pressure on iconic sites, create appeal and encourage visitors to linger, connect and discover.

A new visitor hub will be the gateway to the western parks. It will be the first stop for visitors to plan their trip and learn about the local environment.

The Rocky River precinct will provide accommodation within its Visitor Use Zone for a diversity of visitors, with additional day-visitor facilities, space for groups and events, and trail heads. The rebuild at Remarkable Rocks will enhance access for people of all ages and abilities. Kelly Hill Caves will be expanded to offer active experiences, new facilities, interpretation and walking trails, as well as cave exploration experiences.

Visitor facilities at Seal Bay will continue to provide an immersive viewing and learning experience and manage visitor numbers, while supporting sea-lion conservation and research.

The types of accommodation anticipated in designated Visitor Use Zones includes RV sites, traditional camping, permanent tents, cabins, pods, cottages (heritage) and other small-scale structures provided on a temporary or short-term arrangement to visitors on a commercial basis. Such tourist accommodation may be privately operated, in which case appropriate lease arrangements will be negotiated. There will also be a number of camping nodes along multi-day walking trails. Visitor Use Zone locations are provided as maps in the appendix, with camping options detailed in Table 1. The strategies under each objective describe the type of facilities or accommodation provided within the zone at each site.

To diffuse visitor numbers, additional viewing platforms and photo opportunities can serve as stopping points.

Walking and cycling trails of various difficulties and durations will be explored in Flinders Chase National Park. Trail opportunities will seek to utilise existing trails and tracks where possible. Current alignment of the Kangaroo Island Wilderness Trail will be reviewed with new sections designed in accordance with the walking and cycling trails strategy.

All visitor facilities will be designed to maximise sustainability and minimise impact on the natural landscape. Building footprints will align with previously disturbed areas where possible, landscaping around buildings will be sympathetic to surrounding native vegetation, water sensitive design principles will be incorporated, and low impact building materials will be used.

New and existing recreation sites will be designed and renovated to provide access for people living with a disability wherever possible.

Where facilities are proposed in coastal areas, risk from shoreline erosion, coastal inundation and sand drift over the life of the infrastructure will be assessed against Coast Protection Board Policy. Access restrictions may be implemented in locations across the protected areas for management purposes.

Visitor experiences will be immersive and enriching, offering opportunities to connect with nature while encouraging learning about our natural environment.

Operational infrastructure that supports the provision of exceptional visitor experiences will be located in Flinders Chase National Park and other locations as required. This will include staff accommodation and a works depot (staff amenities, workshops, storage and wash down facilities).

New facilities damaged by fire are to be replaced at Harveys Return Campground, including a shelter.

Table 1. Camping in Parks of Western and Central Kangaroo Island

The following classification has been developed to describe the accommodation types that could be supported in the parks provided they are appropriately sited and designed.

	Basic camping	Standard camping
Toilets	⛺	⛺
Water (tank/tap)	⛺	⛺
Fire pits (in defined locations)	⛺	⛺
Showers (may be solar heated)		⛺
Picnic table/shelter	⛺	⛺
Barbeques		⛺
Power (electricity/solar)		⛺

Objective and strategies

Develop park facilities to create exceptional visitor experiences.

- Position a new Flinders Chase Visitor Hub by the eastern entrance of Flinders Chase National Park (Figure 1) to support visitor planning, research and education. This land will be added to Flinders Chase National Park.
- Continue to provide quality visitor experiences at Seal Bay within the Visitor Use Zone and Tour Zones (Figure 3). Consider and carryout upgrades and redevelopment of the building and boardwalks within these zones if required.
- Facilitate opportunities for enhancing visitor experiences at Cape Borda in Flinders Chase National Park, including improving the heritage accommodation and day visitor facilities (Figure 4).
- Re-purpose Rocky River in Flinders Chase National Park as a site for day and overnight visitors to experience the park through the provision of accommodation ranging from RV sites to standard camping sites, with flexible day visitor facilities and trail heads (Figure 5).
- Rebuild May's Homestead and Postman's Cottage in Flinders Chase National Park and keep in good order and make available for visitors to provide overnight accommodation sympathetic with the heritage of the buildings.
- Provide quality visitor facilities at Cape du Couedic (Figure 6) and Remarkable Rocks (Figure 7) in Flinders Chase National Park that support immersive and meaningful natural experiences. In the Admirals Arch Visitor Use Zone, continue to provide an appropriate and safe visitor experience to access the arch without disturbing marine mammals by maintaining and if required, replacing and improving the board walk (Figure 6).
- In Kelly Hill Conservation Park (Figure 8), contemporise the visitor experience within the Kelly Hill Caves and provide supporting visitor facilities in harmony with the new Flinders Chase Visitor Hub. Restore and repair Edwards Cottage and keep in good order and make available for visitors to provide overnight accommodation sympathetic with the heritage of the building (Figure 8).
- In Flinders Chase National Park, maintain the experiences at West Bay (Figure 9) and Snake Lagoon (Figure 10) through the provision of sympathetic basic camping facilities. In the Snake Lagoon Campground Visitor Use Zone, consider expanding the number of campsites, and provide for a proposed Staging Post and accessibility for larger camper trailers. Provide a shelter within West Bay Visitor Use Zone. Investigate and if required provide opportunities for camping at Grassdale.
- Facilitate opportunities for basic camping and visitor activities at Murray Lagoon in Cape Gantheaume Conservation Park, including non-motorised on-water activities and birdwatching (Figure 11).
- Restore the camping facilities at Harvey's Return in Ravine des Casoars Wilderness Protection Area, through the provision of camping facilities, toilets and picnic shelter within the defined Visitor Use Zone (Figure 2).
- Provide basic camping and facilities at Wreckers Beach, Tea Trees, Big Dune and Wheaton's Beach in Cape Gantheaume. Due to the intricate nature of these campsites, mapping Visitor Use Zones was not practicable. As a result, this plan determines to maintain the campsite areas at current footprints.
- Provide visitor facilities at camp sites along multi-day walking trails.
- Along the Kangaroo Island Wilderness Trail, provide camping facilities including toilets and shelters at Cup Gum Campsite (including a Staging Post) (Figure 10), Hakea Campsite (Figure 6), Banksia Campsite (Figure 12) and Tea Tree Campsite (Figure 8).
- Facilitate opportunities for small scale tourist accommodation options at overnight camping nodes along the Kangaroo Island Wilderness Trail within identified Visitor Use Zones:
  - Sanderson Bay – Eight accommodation pods (including guides accommodation), shared facilities, Staging Post, lookout, last resort refuge pod, and associated new roads/tracks or other infrastructure (Figure 12). Staging Post proposed to be located within Sanderson Bay Staging Post Visitor Use Zone (Figure 12).
  - Rocky River (Maupertuis Bay) – Seven accommodation pods, one guide accommodation pod, shared facilities, a lookout, staging post, services building, refuge pod, and associated new roads/tracks or other infrastructure (Figure 10).
  - Cape du Couedic – Three lodges, shared facilities, staging post, lookout, and associated new roads/tracks or other infrastructure (Figure 6).
- Provide visitor facilities that support access and interpretation in Ravine des Casoars Wilderness Protection Area (Scott Cove and Harveys Return) and Flinders Chase National Park (Black Swamp, Platypus Waterholes and Weirs Cove).
- Provide infrastructure including staff accommodation and a works depot at Flinders Chase National Park to support park operations and the delivery of visitor experiences (Figure 13).

Objective and strategies

Ensure park facilities and infrastructure are sustainably designed, constructed and operated, minimising impacts on the natural environment.

- Enable the development of visitor facilities that maintain conservation values and are sympathetic to the island's natural landscape.
- Provide visitor experiences in wilderness protection areas that build awareness and appreciation of wilderness quality (refer Visitor Management Strategy, pg 17).
- Collaborate with tourism businesses that provide opportunities for visitors to connect with nature, ensuring that all tourism activities are delivered in a responsible and sustainable way. A Conservation Dividend may be required in addition to the lease or licence for these activities and will be used to contribute to approved conservation programs in these parks.
- In line with a walking and cycling trail strategy, maintain a network of interlinked high quality trails, and improve and diversify trails by investigating opportunities to expand and where appropriate, re-commission trail networks to link existing and new destinations.
- Support the ongoing licenced extraction of water from dams in Lathami Conservation Park for community water uses at Stokes Bay.

THEME 4:
Managing fire

Fire is a natural part of the Australian landscape and has shaped its flora and fauna for thousands of years. However, the changing landscape, land clearance and development, and a changing climate are increasing bushfire risk across southern Australia. Climate change projections include drier and hotter conditions, and a greater frequency of dangerous fire weather.

The recorded history shows that Kangaroo Island has had a major bushfire every 10 years. The 2019-20 bushfires were the largest on record and had a significant impact on the local community and environment (Figure 14).

Fire management on protected areas requires an integrated landscape approach across public and private land to reduce and mitigate the impacts of bushfires on life, property and the environment. This utilises the elements of prevention, preparedness, response and recovery. It also includes promoting improved ecological and biodiversity outcomes. Detail can be found in the relevant fire management plan at environment.sa.gov.au.

Bushfire mitigation activities, including prescribed burning and the construction and maintenance of fire access tracks, are a critical part of prevention and preparedness. Prescribed burning targets fine fuel (twigs, sticks, leaves and bark) as it ignites easiest and carries the fire front. These activities focus on the most effective locations to reduce bushfire risk using techniques appropriate to the local environment.

Prescribed burns cannot stop bushfires, particularly under heightened fire danger weather. However, they can influence fire behaviour, provide a safer environment for firefighters, increase defendable space around assets, provide earlier containment options, and leave unburnt islands of vegetation that support species to persist post-bushfire.

There are significant challenges to safely conducting prescribed burns on the island due to the remoteness and inaccessibility of many of the parks, and the small number of days suitable to conduct these burns each season. In addition, local coastal mallee and heath vegetation are some of the most challenging fuel types in Australia in which to conduct prescribed burns.

Ecologically appropriate fire regimes will be established by creating 'mosaics' in native vegetation to provide a mix of habitats to conserve all species. Mosaics are created by burning different sites in different years, to establish varying age classes across the landscape. The variation in fuel levels across the landscape lowers the bushfire risk by slowing the spread and reducing the intensity of the fire. This decreases the potential for large areas to burn in a single event. Developing an appropriate fire regime also considers species habitat requirements.

Other fire management activities in protected areas include modifying fuel loads (lopping, chipping, crushing, piling and slashing vegetation), targeting woody weeds that contribute to fuel hazards, and maintaining fire access tracks.

Existing fire access tracks need to be improved, including realigning portions of East Melrose and West Melrose Track (Figures 15 & 16) to enhance firefighter safety and deal with more severe bushfire conditions. Creating new fire access tracks in strategic locations will assist in the event of a bushfire, with easier and safer access for firefighters. These tracks will use sensitive and sustainable design which considers environmental assets and will be gated in strategic locations to prevent public access. An annual audit will ensure fire access tracks can be safely accessed by firefighting appliances for prescribed burning and bushfire response. On-ground investigations will be undertaken to determine the most appropriate route.

Any fire management works in wilderness protection areas are undertaken in accordance with the South Australian Code of Management for Wilderness Protection Areas and Zones, which states that fire management will be informed by fire history, understanding the impact of fire on the natural communities and to maintain wilderness quality. Fire management will aim to reduce the likelihood of entire areas burning in a single event and improve ecological outcomes using prescribed burns. Fuel reduced areas, fire access tracks and water tanks will also make bushfires easier to manage.

Five new permanent fire access tracks in Ravine des Casoars Wilderness Protection Area are required to support fire management (Figure 17). Following the Code of Management, these tracks will be strategically located where possible, to align with current control lines from the 2019-20 bushfire and to have the least long-term impact on wilderness quality. Two new water tanks will also be established in Ravine des Casoars Wilderness Protection Area to assist with fire suppression activities.

Temporary control lines may be required to supplement permanent fire access tracks. Temporary control lines also enable more adaptive and appropriate fire regimes to be brought into this unique landscape for a short time, which provide agility for the fire management program to target where it will most benefit the landscape, including more remote and large contiguous areas of vegetation.

Fire management plans for the parks will continue to be maintained and updated to reflect contemporary land and fire management practices for the long-term, and provide communities with ongoing opportunities for local input and cooperation.

Objective and strategies

Lessen the risk, intensity and spread of bushfires through fire management activities to make suppression more achievable and safer, and to maintain or improve biodiversity.

- Engage with neighbouring landholders, the community, the Country Fire Service, and other stakeholders to help reduce bushfire risk.
- Maintain and improve the fire management plan for these parks, using the latest technology and science, to achieve best-practice bushfire risk mitigation and land management objectives, while taking into consideration the unique ecological communities of these areas.
- Improve our understanding of the role of fire in Kangaroo Island ecosystems and of the effects of climate change through research and monitoring in collaboration with the community, eNGOs, universities and other government organisations.
- Implement and maintain appropriate fire regimes in the protected areas of the Parks of Western and Central Kangaroo Island Management Plan.
- Establish new fire access tracks and water tanks in the Ravine des Casoars Wilderness Protection Area (Figure 17) and realign portions of East Melrose and West Melrose Track (Figures 15 & 16) to support suppression and enable a greater diversity of vegetation age classes to be established through prescribed burning.
- Improve and maintain fire management infrastructure, including tracks, water access, fuel breaks, machinery and equipment to support better response to remote ignitions in parks.
- Explore opportunities to incorporate cultural burning practices in fire management activities with the First Nations of Kangaroo Island.

THEME 5:
Conserving cave and karst features and palaeontological sites

Karsts are landforms and landscapes created when rock materials are dissolved to a large degree by natural waters, resulting in caves, ridges, towers, fissures, sinkholes and other landforms.

Kelly Hill Conservation Park is well known for its significant karst landscape that contains an extensive dry cave system. The caves hold many delicate and beautiful cave formations (speleothems), as well as a large number of caverns at several levels which have been used for tours since the 1920s. Along the west coast of Ravine des Casoars Wilderness Protection Area and the south coast of Flinders Chase National Park, karst environments extend for kilometres inland. Numerous coastal and inland caves occur in these areas, including the cave at the mouth of Ravine des Casoars River, Possum Skin Cave near Cape Borda and West Bay Hollow south of West Bay. Mount Taylor Conservation Park and Cape Bouguer Wilderness Protection Area also contain cave and karst systems.

The cave and karst features within the parks are geologically significant, provide opportunities for palaeontological research and exploration, and are an important visitor attraction. Karsts are highly sensitive systems and require careful protective management.

Visitor facilities at the Kelly Hill Conservation Park cave site were extensively damaged by the 2019-20 bushfires. The replacement of facilities provides an opportunity to enhance the visitor experience and to identify and protect previously unrecorded or untouched caves and karsts.

Human disturbance will need to be carefully managed during construction to ensure that the sensitive features of caves are not damaged. Cave infrastructure should follow best design practices, including well designed lighting systems and low impact in-cave infrastructure.

Management of the flow and quality of water and gases through cave and karst systems is critical. Minimising disturbance to surrounding vegetation and soils is required to avoid adverse consequences on karsts and associated speleofauna.

Further research is needed to work towards an inventory of caves and determine the values and potential threats to each section of the accessible cave network. This investigation will inform the establishment of a zoning plan and classification system to guide the level and type of access to each cave section.

Palaeontological deposits are present in Flinders Chase National Park. Dating of Zygomaturus, Diprotodon and Macropus fossils discovered near Black Creek Swamp suggest that Kangaroo Island was one of the last refuges for Australia's Pleistocene megafauna (from around 1.8 million to 11,000 years ago). Recent research has shown that the fossil horizon at the site is more extensive than originally believed and may preserve internationally significant evidence of interaction between the megafauna and human inhabitants. The site extends along the southern edge of a swampy flat near the original homestead at Rocky River. Walking trails provide access to the site, with interpretative signs.

Objective and strategies

Conserve cave and karst features and palaeontological sites, while providing visitor opportunities to experience and appreciate these environments.

- Work with the Kangaroo Island Landscape Board and landholders to manage landscapes and water resources within and adjacent to the parks to minimise adverse impacts on caves and karsts.
- Liaise with researchers and cave enthusiasts to initiate research, share knowledge and develop a cave zoning plan and classification system.
- Facilitate safe and sustainable visitor experiences to Kelly Hill Conservation Park caves that preserve cave features and environments. Access to other caves will require permissions from DEW and be guided by the classification system.
- Monitor cave environments regularly to identify management requirements and support timely remediation of any damage.
- Facilitate further speleological research and provide managed access and interpretation for visitors to fossil sites.

THEME 6:
Celebrating cultural heritage and history

People have lived on Kangaroo Island for thousands of years. Evidence of their presence has been left behind in the form of stories, knowledge, stone tools, lighthouses, buildings and grave sites.

Kangaroo Island is culturally significant to Kaurna, Ngarrindjeri and Narungga People and their stories about the island have been passed down over generations. Archaeological evidence suggests that Aboriginal people lived on Kangaroo Island before its separation from the mainland.

Aboriginal cultural sites including tools and middens have been recorded within a number of protected areas. All Aboriginal sites, objects and remains are protected from damage, disturbance or interference by the *Aboriginal Heritage Act 1988*, regardless of whether they have been registered or reported.

The first written records of the island were made in 1802 by Captain Matthew Flinders during the Investigator expedition.

Soon after, Captain Nicolas Baudin surveyed much of the island's coastline and named features including Cape du Couedic, Cape Borda, Cape Gantheaume, Vivonne Bay and D'Estrees Bay.

During the early 1800s, Kangaroo Island was the domain of sealers and whalers, with the colonisation of Southern Australia producing a rapid expansion of transport and trade.

Sites within the protected areas help to conserve important physical objects and reflect the maritime history of the Island. These include Harveys Return, Weirs Cove, Cape Borda and Cape du Couedic lighthouse precincts, numerous shipwrecks adjacent to the parks, and a whaling site at D'Estrees Bay. Mays Cottage, Postman's Cottage and Edwards Cottage are all relics of settlers in the early 1900s.

The following sites are on the South Australian Heritage Register and protected through the provisions of the *Heritage Places Act 1993*.

- Cape Gantheaume Conservation Park - D'Estrees Bay Whaling Site, Threshing Floor.
- Flinders Chase National Park - David Kilpatrick's Grave, Cape du Couedic Lighthouse including Keepers' Cottages, Stable and Store, Cape Borda Lighthouse and Keepers' Cottages, Postman's Cottage and May's Cottage, Weirs Cove Jetty, Funnelway and Store Ruin.
- Kelly Hill Conservation Park - Edwards Cottage and Sealer's Sites.
- Ravine des Casoars Wilderness Protection Area - Harveys Return Cemetery and Harveys Return Landing Site.

Information for visitors at some of these sites explains their significance, and reinforces the trust placed in visitors to leave historic sites and relics as they found them.

Objective and strategies

Work in partnership with First Nations groups to manage the parks and wilderness protection areas.

- Practice cultural heritage management protocols for working with First Nations people to manage parks and wilderness protection areas.
- Incorporate traditional knowledge and skills of the First Nations people into research, monitoring and management activities (including fire management) to build capacity and maintain and enhance culture and connection with the parks.

Objective and strategies

Tell the stories of the parks to help visitors develop greater appreciation, understanding and respect for the deep relationship between First Nations people and Kangaroo Island.

- Educate visitors about the importance of the parks for First Nations people through the provision of interpretive information, and the delivery of relevant cultural visitor experiences at key sites across the parks and wilderness protection areas.

Objective and strategies

Conserve and celebrate the parks' rich cultural heritage and history.

- Maintain, restore and enhance heritage sites and use these to share the story of Kangaroo Island's non-Aboriginal history.
- Provide tours and information for visitors about heritage places, and the historical importance of Flinders Chase, centring on their conservation and their significance to Kangaroo Island and South Australia.

Appendices

INVESTIGATOR STRAIT

Scott Cove

Scott Cove

Harveys Return

FLINDERS CHASE NATIONAL PARK

Harveys Return Cemetery

Harveys Return Campground

CAPE BORDA ROAD

RAVINE ROAD

RAVINE DES CASOARS WILDERNESS PROTECTION AREA

Figure 2

Harveys Return Campground & Scott Cove

0m 100 200

LEGEND

- Unsealed road
- Track
- Parking
- Toilets
- DEW park boundary
- Visitor Use Zone

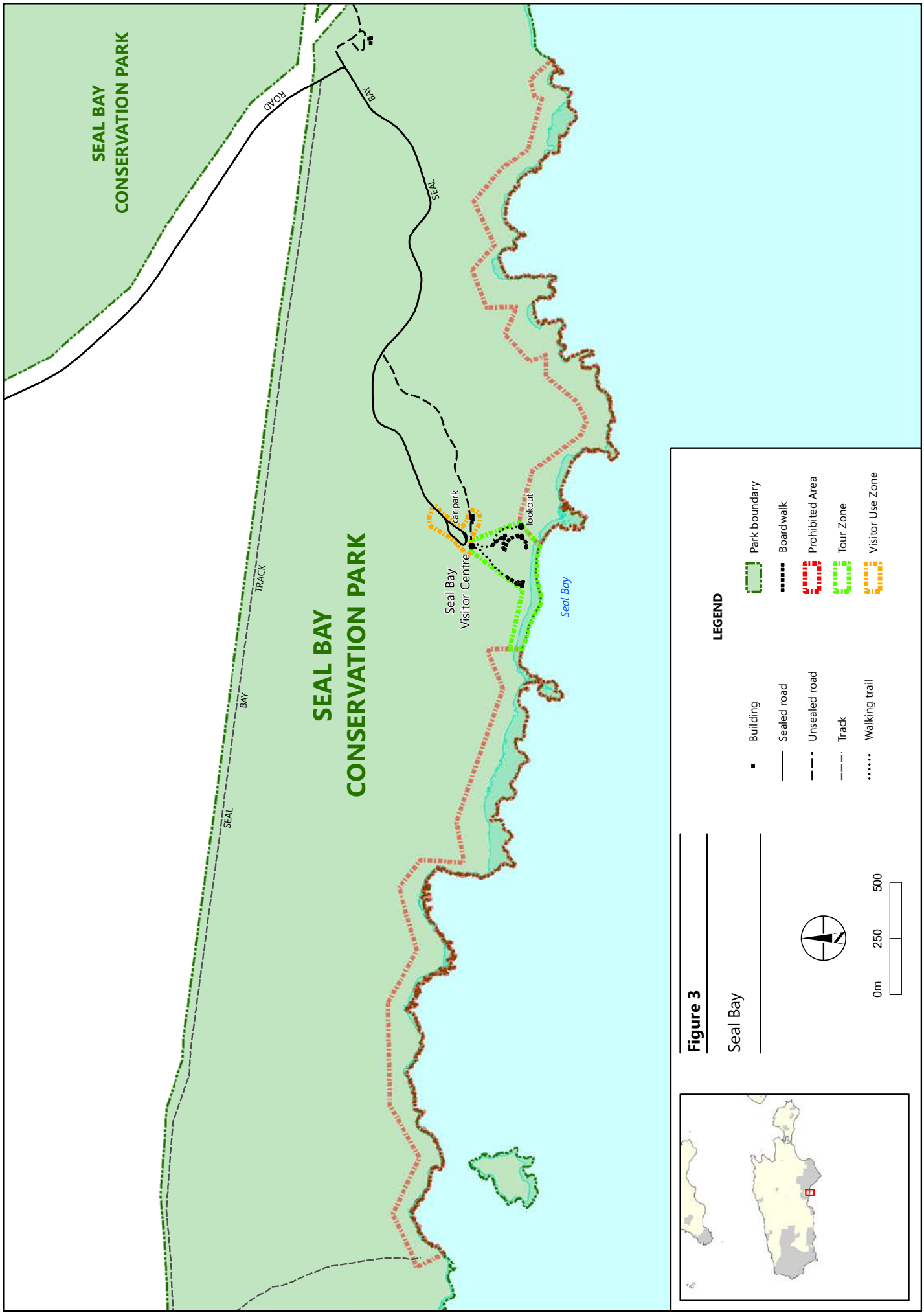


Figure 3

Seal Bay

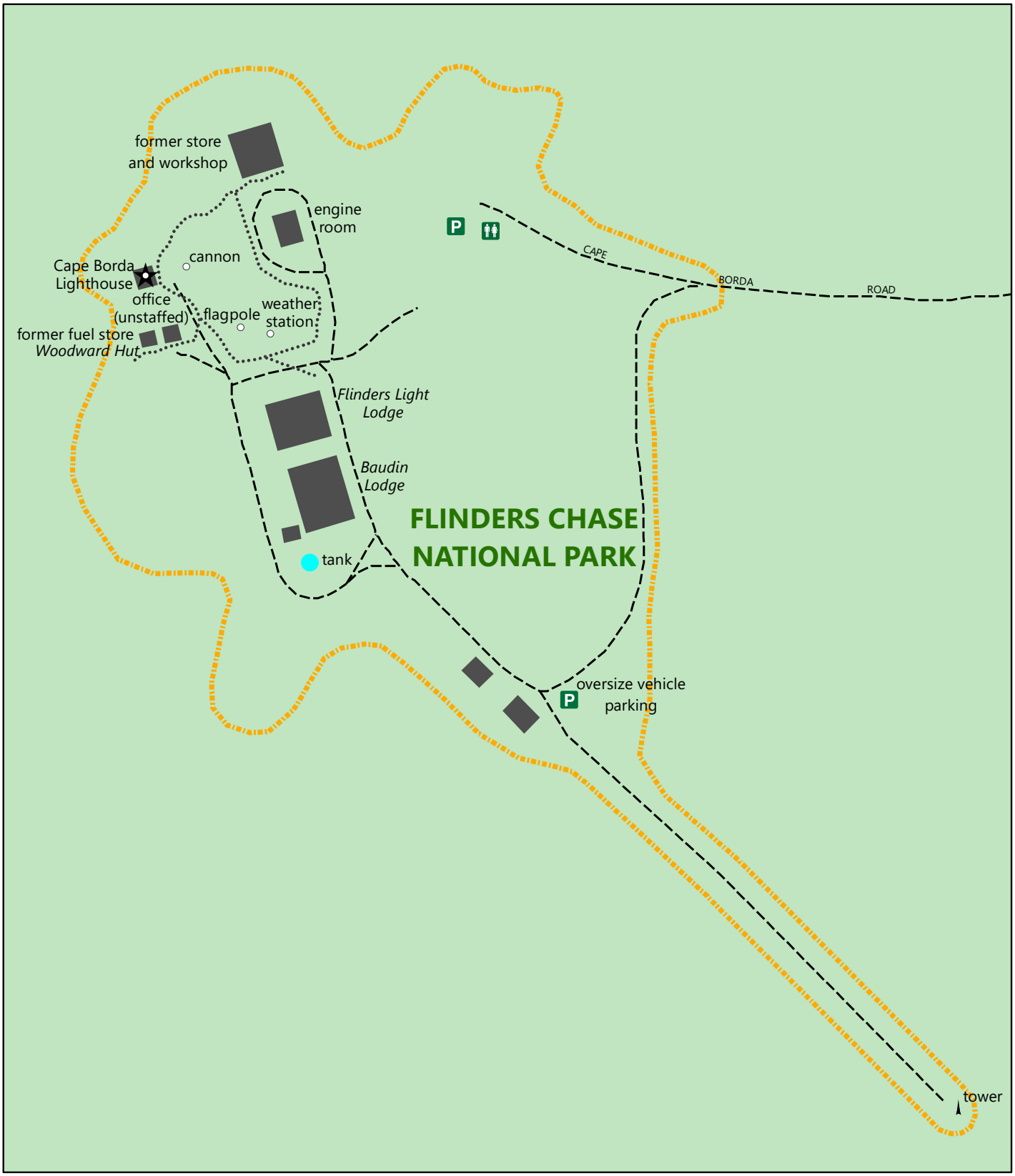


Figure 4

Cape Borda

0 m 10 20 30

LEGEND

- Building
- Unsealed road
- Walking trail
- Visitor Use Zone
- Parking
- Toilets

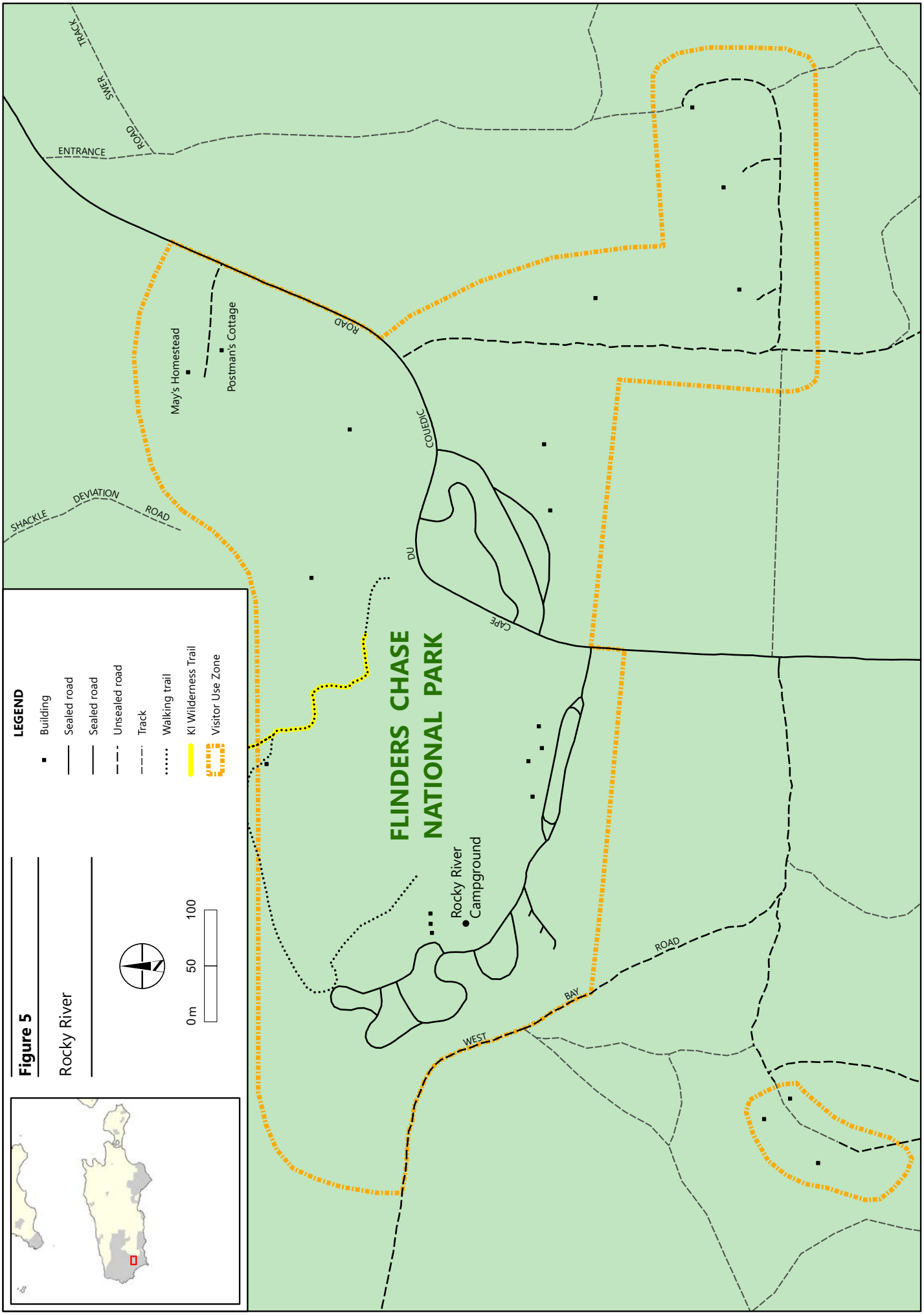


Figure 5
Rocky River
LEGEND
Building
Sealed road
Sealed road
Unsealed road
Track
Walking trail
KI Wilderness Trail
Visitor Use Zone
0 m
50
100
FLINDERS CHASE NATIONAL PARK
Rocky River Campground
CAPE DU COUEDIC ROAD
WEST BAY ROAD
SHACKLE DEVIATION ROAD
ENTRANCE ROAD
SNIPER TRACK
May's Homestead
Postman's Cottage

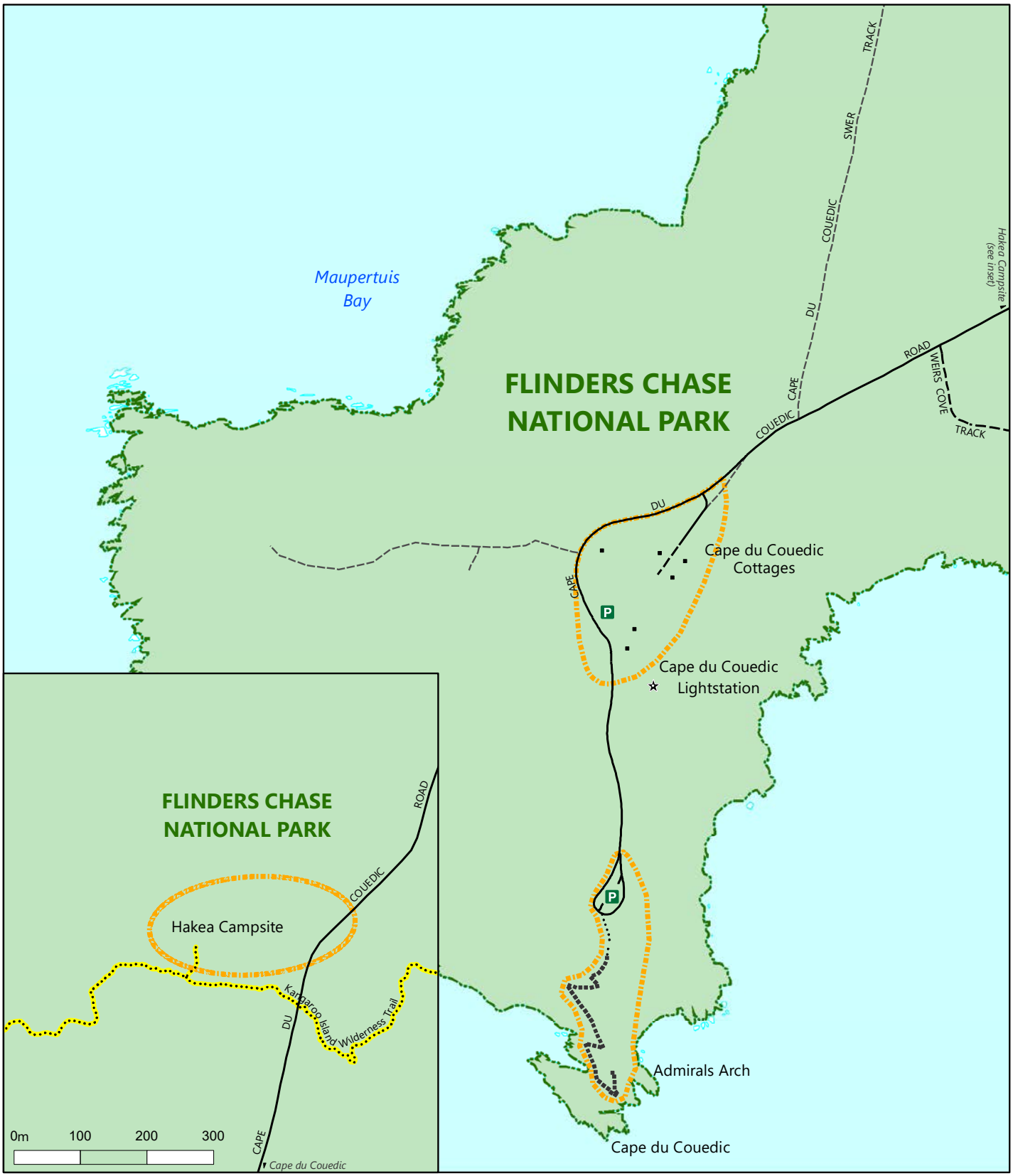


Figure 6

Cape du Couedic Accommodation, Admirals Arch & Hakea Campsite

0m 100 200 300

LEGEND

- Building, Parking
- Sealed road
- Unsealed road
- Track
- Boardwalk
- Walking trail
- KI Wilderness Trail
- Park boundary
- Visitor Use Zone

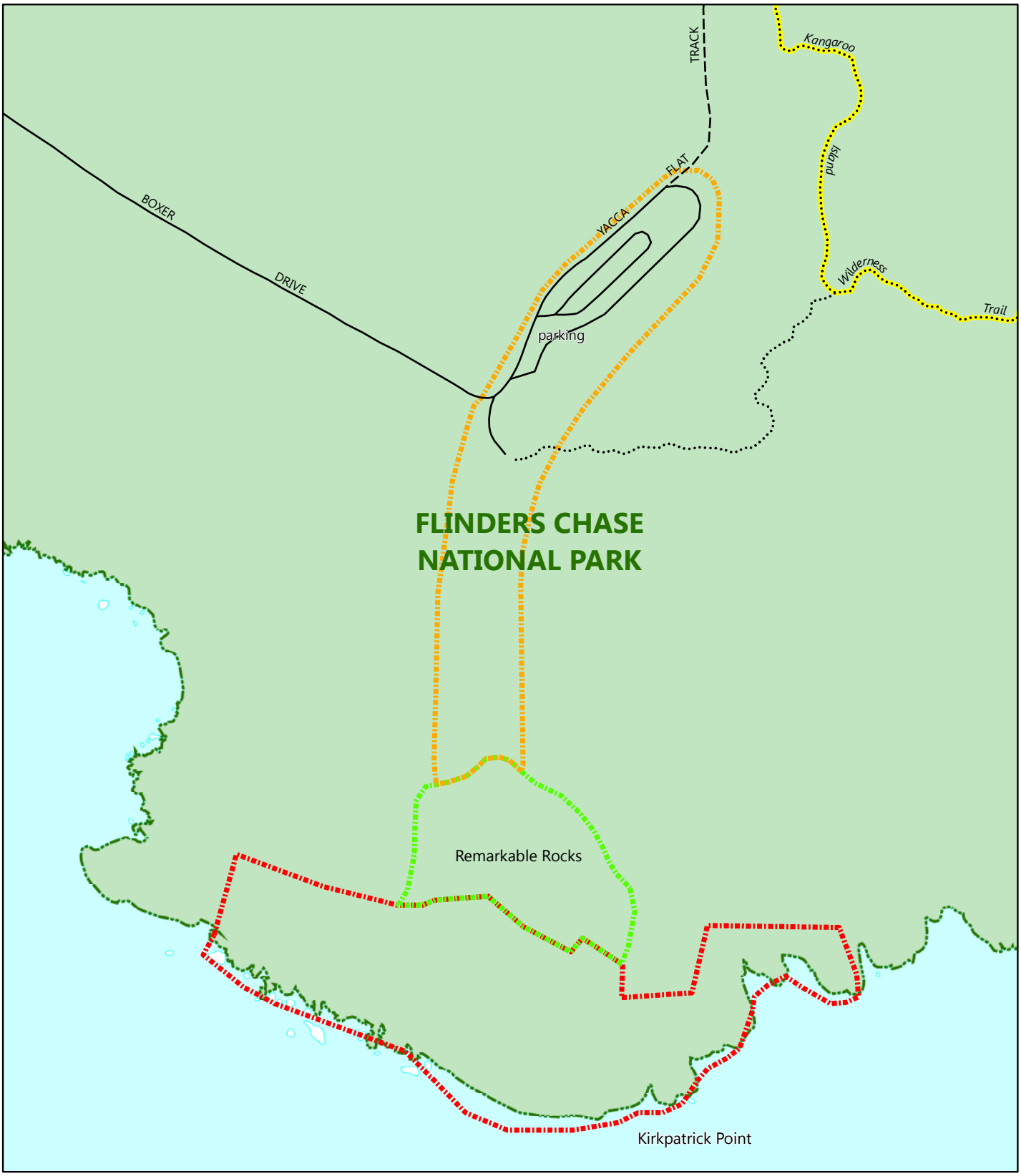


Figure 7

Remarkable Rocks

0m 50 100

LEGEND

- Sealed road
- Unsealed road
- Walking trail
- KI Wilderness Trail
- Park boundary
- Visitor Use Zone
- Remarkable Rocks Protected Area - no access
- Tourist Zone

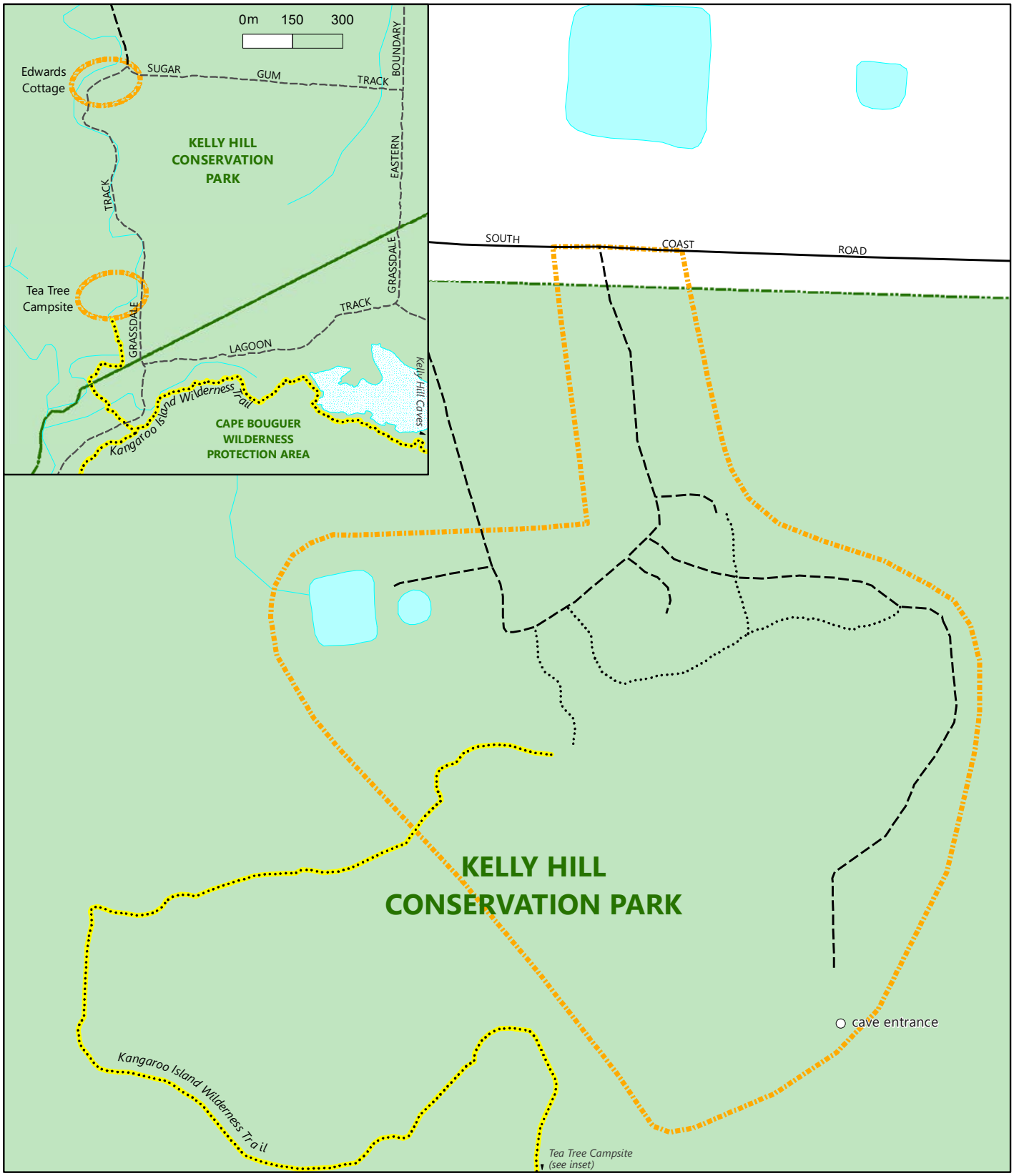


Figure 8

Kelly Hill Caves, Edwards Cottage & Tea Tree Campsite

0m 50 100

LEGEND

- Sealed road
- Unsealed road
- Walking trail
- KI Wilderness Trail
- Visitor Use Zone
- Park boundary
- Waterbody
- Watercourse

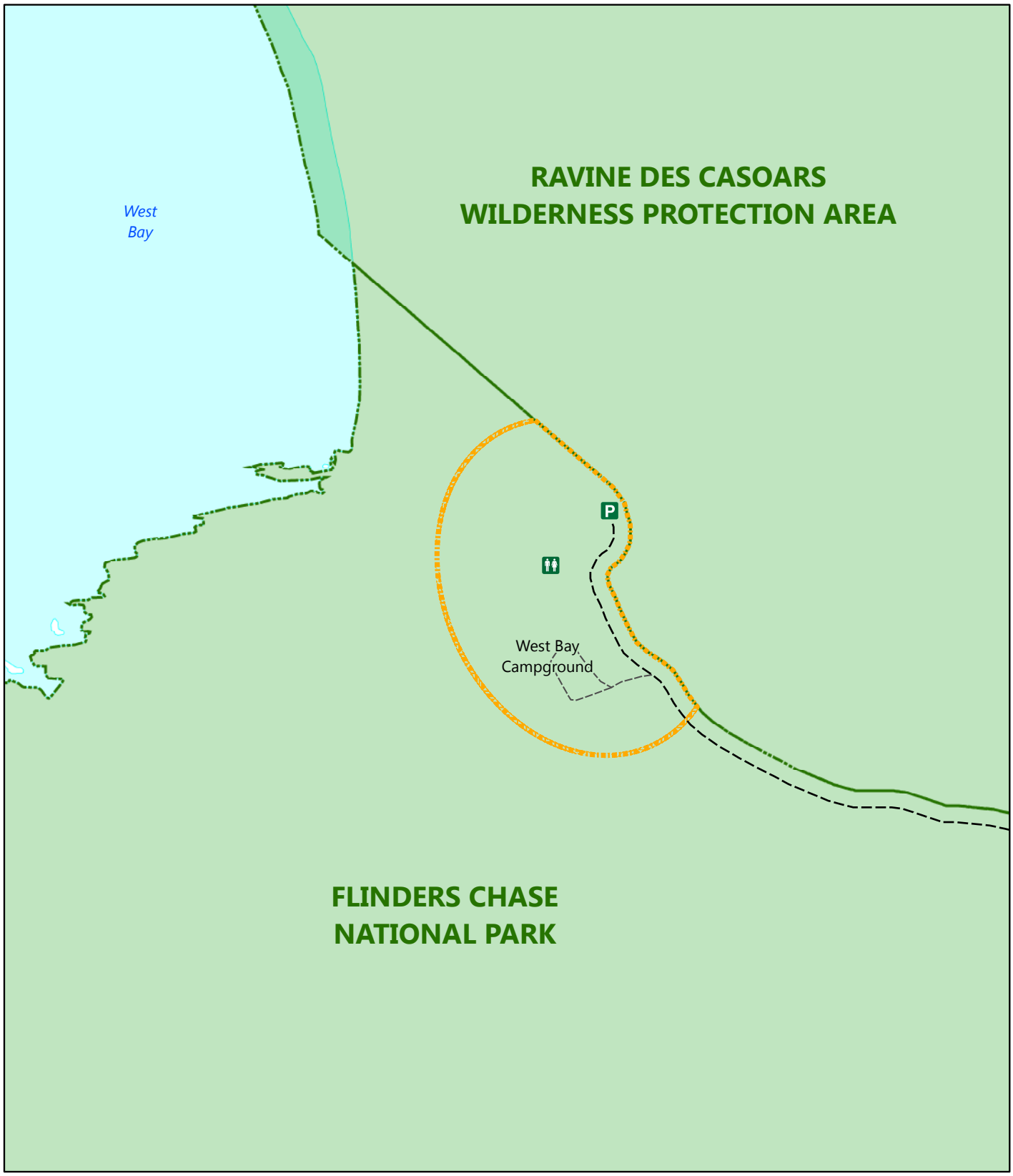


Figure 9

West Bay

0m 50 100

LEGEND

- Unsealed road
- Track
- Walking trail
- Parking
- Toilets
- DEW park boundary
- Visitor Use Zone

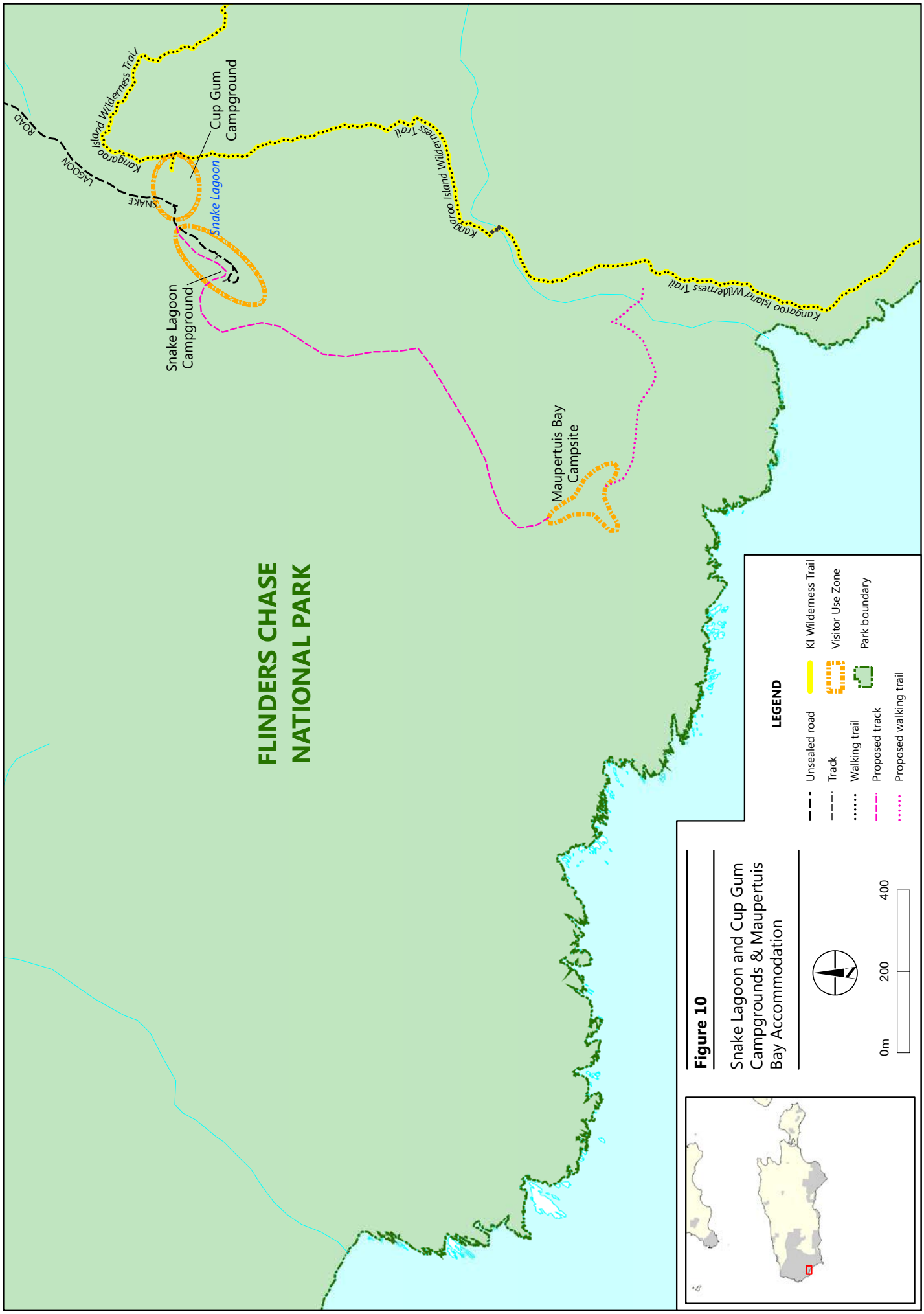


Figure 10

Snake Lagoon and Cup Gum Campgrounds & Maupertuis Bay Accommodation

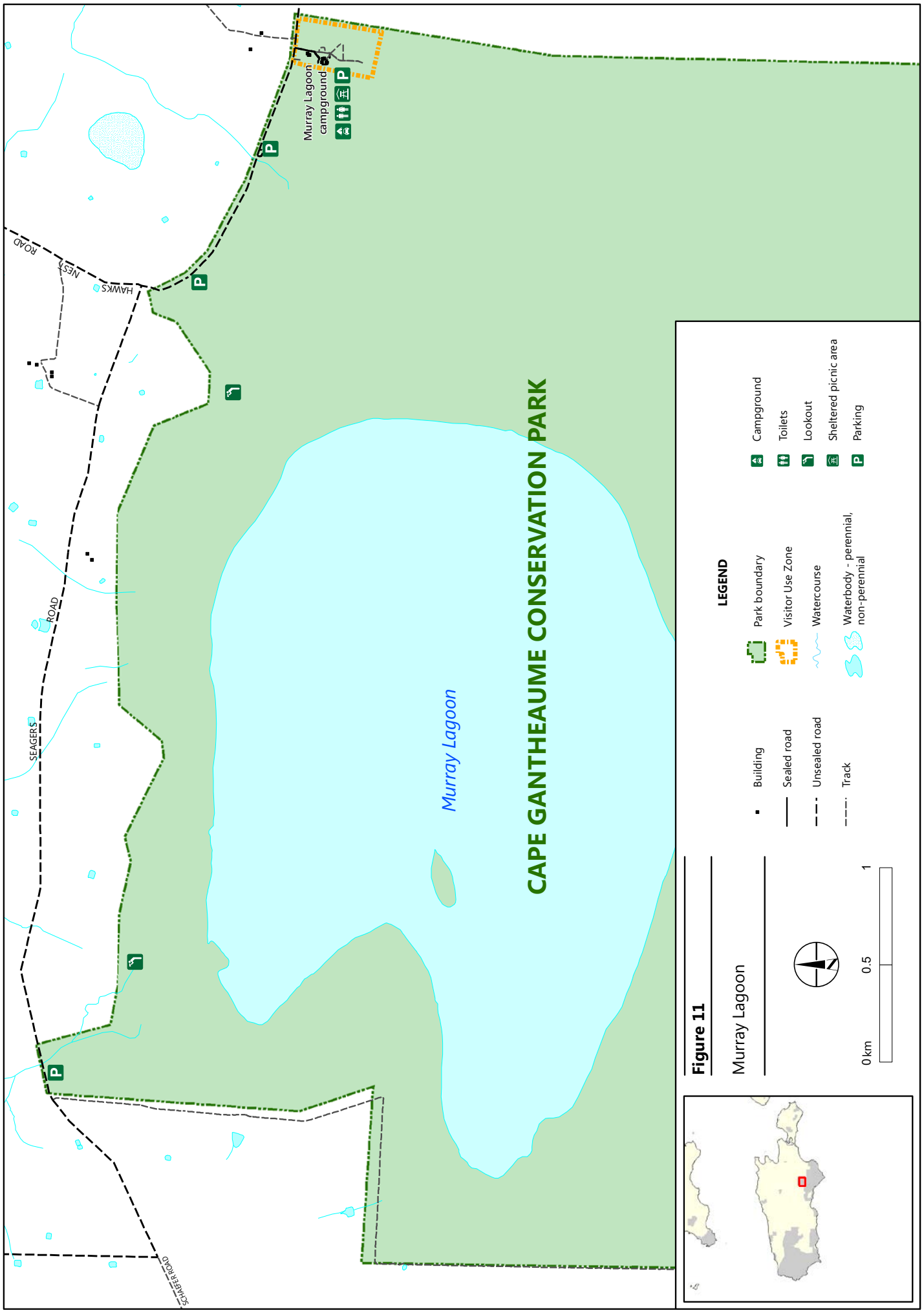
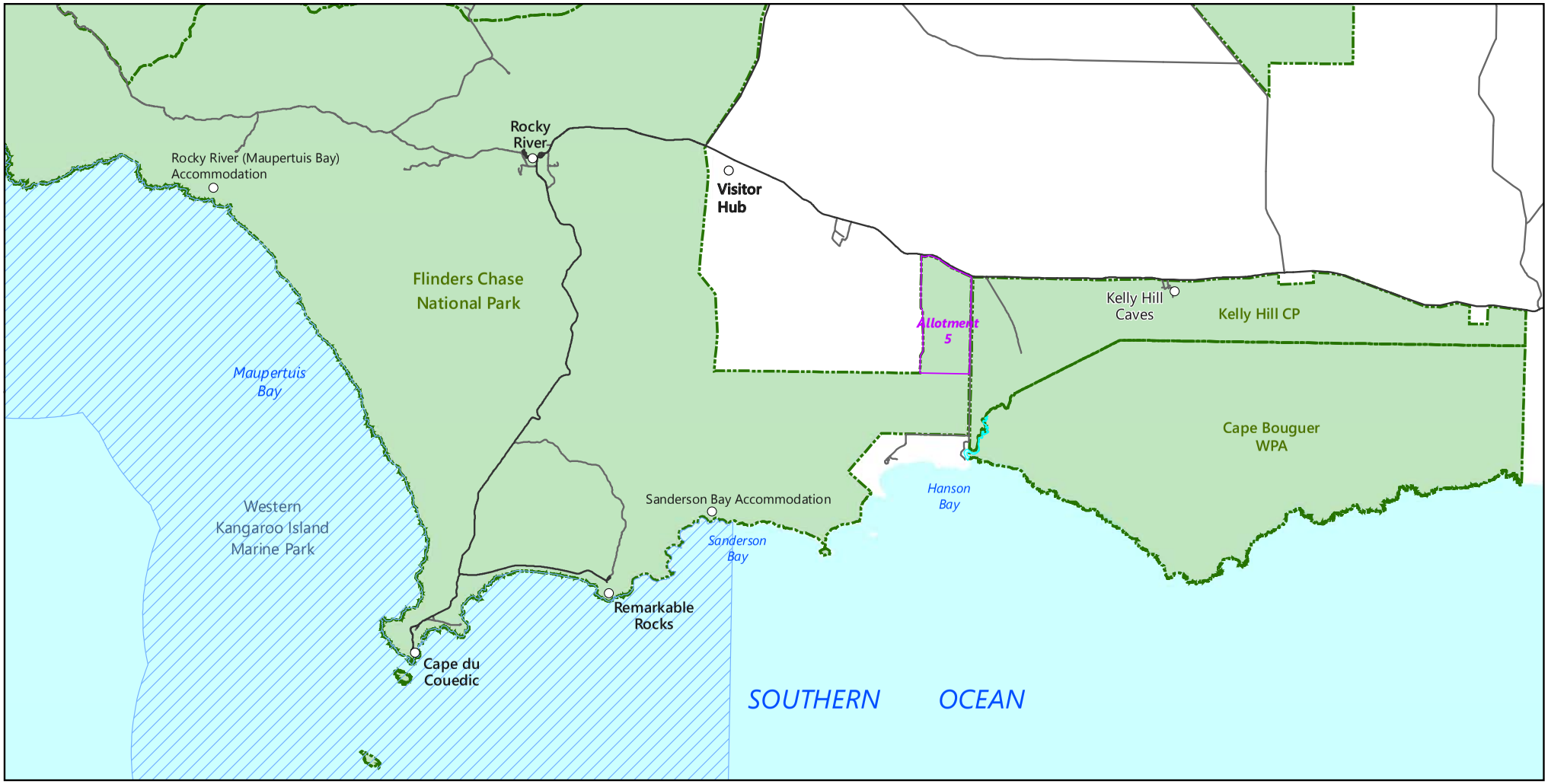


Figure 11

Murray Lagoon

Figure 12

Sanderson Bay Accommodation & Staging Post, & Banksia Campsite



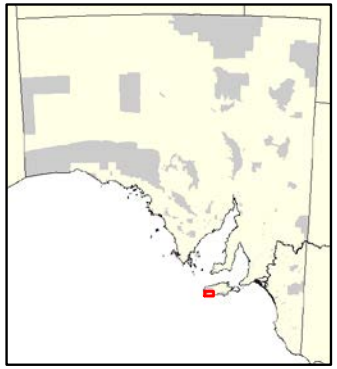


Figure 13

Allotment 5 and South West Parks

km 0 2.5 5

LEGEND

- Park boundary
- Marine Park
- Sealed road
- Unsealed road

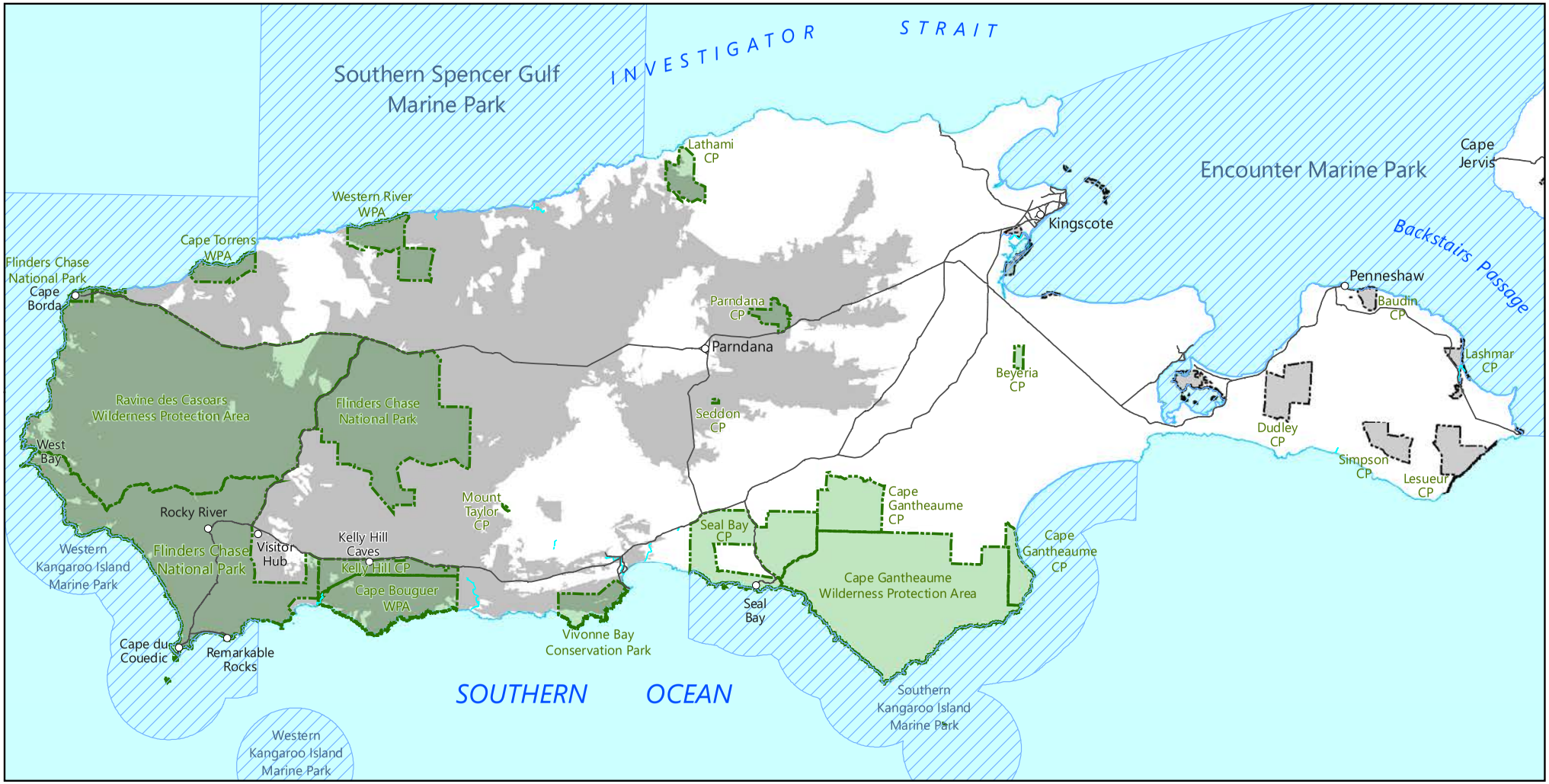


Figure 14

Kangaroo Island Parks
2019-20 Bushfire Extent

0 km 10 20

LEGEND

- Parks covered by this plan
- Other NPWS parks
- Marine Park
- Fire scar - recent fires
- Main road

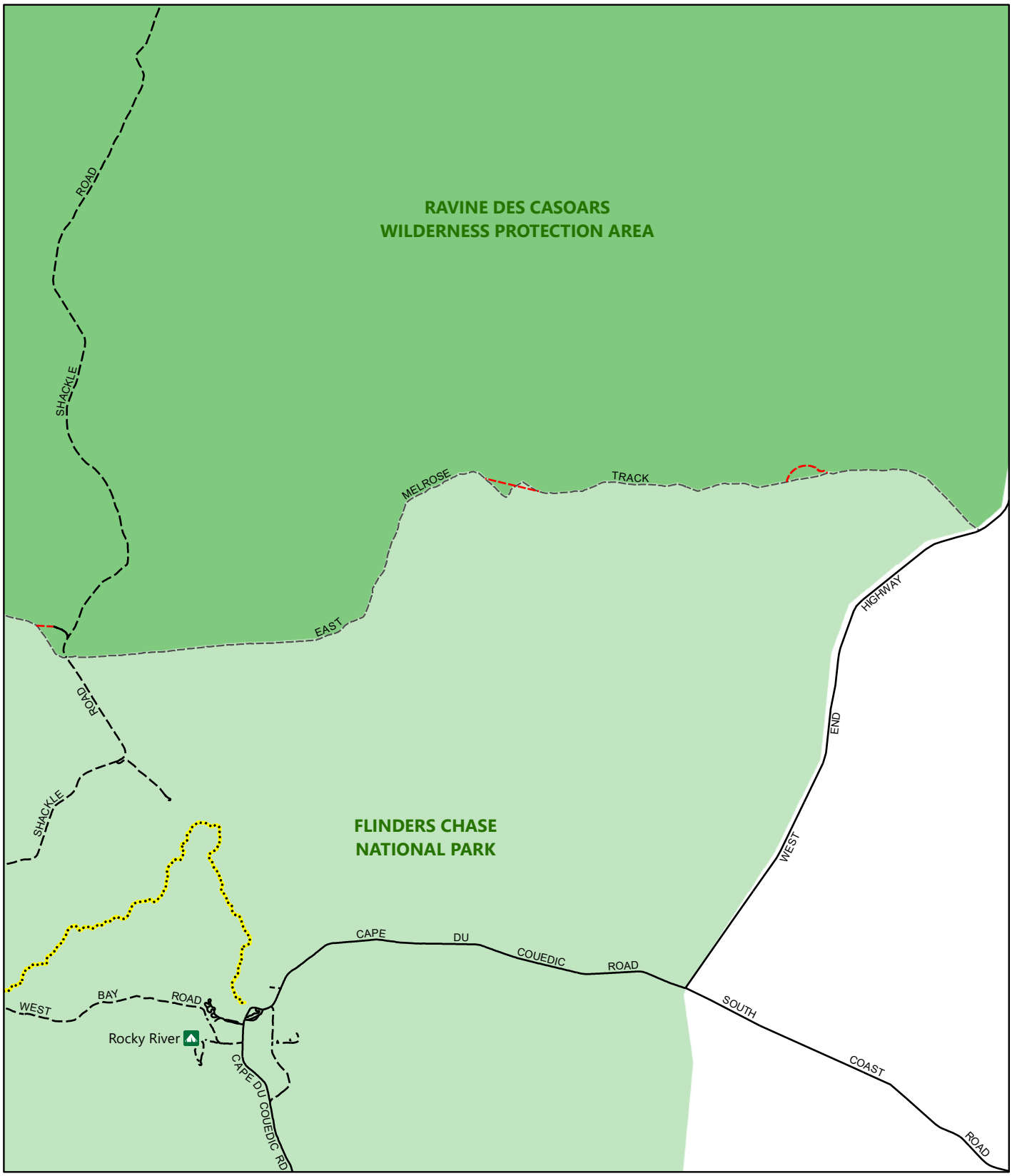


Figure 15

East Melrose Track Realingment

0km 1 2

LEGEND

- Campground
- Sealed road
- Unsealed road
- Fire access track realignment
- Kangaroo Island Wilderness Trail
- National Park
- Wilderness Protection Area

RAVINE DES CASOARS
WILDERNESS PROTECTION AREA

FLINDERS CHASE
NATIONAL PARK

WEST MELROSE TRACK

WEST BAY ROAD

SHACKLE ROAD

WEST BAY ROAD

Snake Lagoon

Cup Gum

Figure 16

West Melrose Track Realingment

0km 1 2

LEGEND

- Campground
- Unsealed road
- Fire access track realignment
- Kangaroo Island Wilderness Trail
- National Park
- Wilderness Protection Area

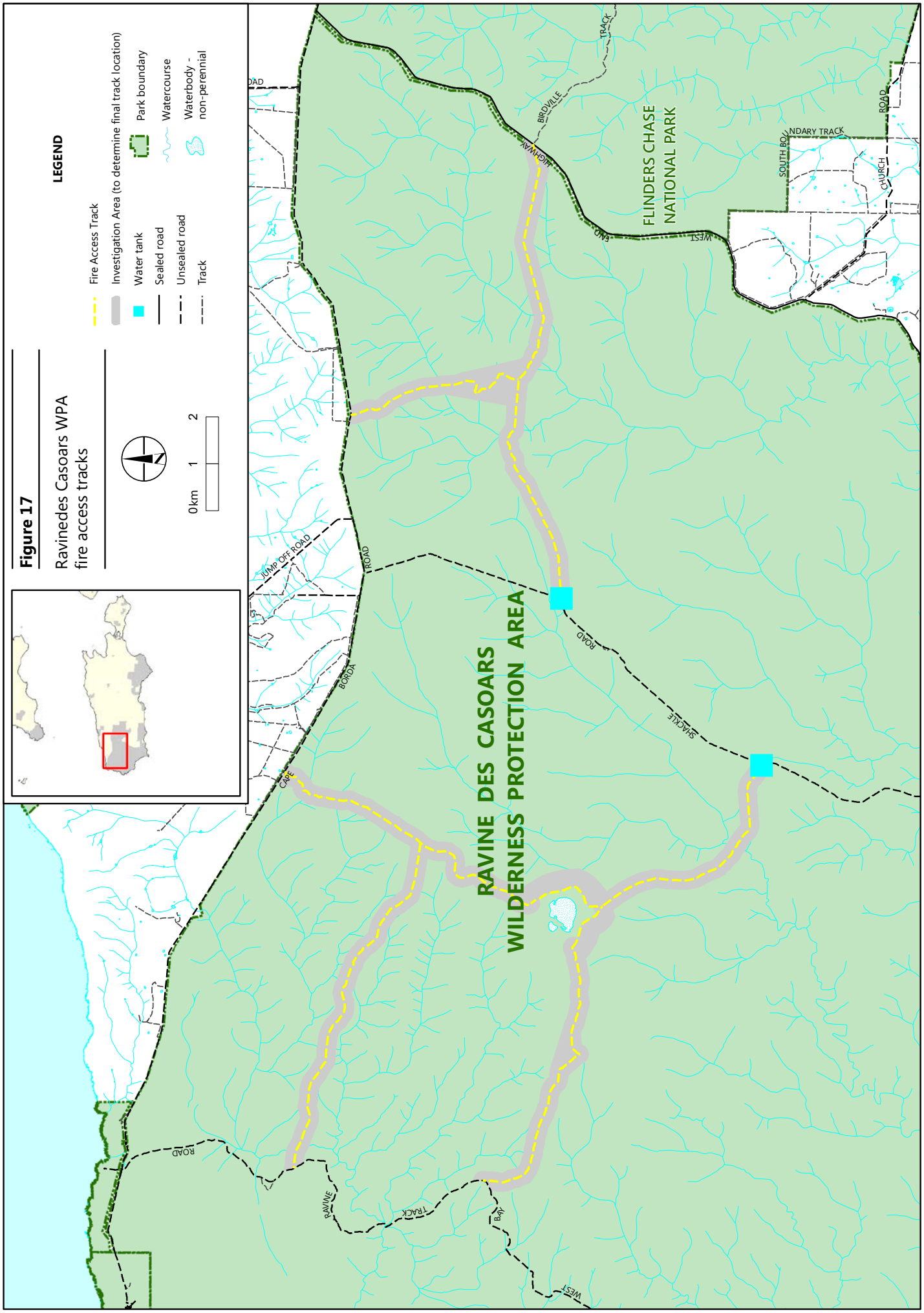


Figure 17

Ravinedes Casoars WPA fire access tracks

References

Birdlife Australia, Key Biodiversity Areas (KBAs) - Nature's Hotspots, accessed 25 January 2022, https://www.birdlife.org.au/projects/KBA

Charles, SP and Fu, G (2015) *Statistically Downscaled Projections for South Australia*. Goyder Institute for Water Research Technical Report Series No. 15/1, Adelaide, South Australia.

Department of Environment and Heritage (DEH) (2004) *South Australian Code of Management for Wilderness Protection Areas and Zones.* DEH, Adelaide.

Landscape South Australia Kangaroo Island, 2020a, *Kangaroo Island Dunnart*, https://www.landscape.sa.gov.au/ki/plants-and-animals/Kangaroo_Island_Dunnart

Landscape South Australia Kangaroo Island, 2020b, *Glossy Black Cockatoo*, https://www.landscape.sa.gov.au/ki/plants-and-animals/native-animals/glossy-black-cockatoo-recovery

Marsden, S. (1991) *'A short history of Kangaroo Island'* http://www.sahistorians.org.au/175/documents/susan-marsden-a-short-history-of-kangaroo-island.html

South Australian Tourism Commission 2019, Kangaroo Island Regional Profile, https://tourism.sa.gov.au/media/3aqpye1h/kangaroo-island_dec19.pdf

Wildlife Land Trust 2018, Humane Society International, accessed 25 January 2022, https://www.wildlifelandtrust.org.au/index.php/resources/heritage-and-hotspots/44-hotspots

For further information please contact:

Department for Environment and Water. Phone Information Line (08) 8204 1910, or see SA White Pages for your local Department for Environment and Water office.

Recognition of Aboriginal Culture:

All references to Aboriginal culture within this document including images, quotes, stories and language have copyright and cultural use protocols which apply. Any reproduction of this material must seek appropriate authority.

With the exception of the Piping Shrike emblem, images and other material or devices protected by 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 | 2022 | FIS 96506

parks.sa.gov.au

SOUTH AUSTRALIA

Government of South Australia

Department for Environment and Water

National Parks and Wildlife Service SOUTH AUSTRALIA