Conservation Action Planning
June 2016 Summary

WildEyre
A Collaborative, Landscape Planning Approach to Biodiversity Conservation on Western Eyre Peninsula, South Australia

Compiled by:
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Acknowledgements
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The Nature Conservancy who designed the Conservation Action Planning (CAP) framework and developed the software and materials to support the participatory conservation planning process

Cover photos by Keith Baseley and Todd Berkinshaw

This document may be cited as:

Version: 08/08/16
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<td>AWC</td>
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<tr>
<td>CAP</td>
<td>Conservation Action Planning</td>
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<td>DEWNR</td>
<td>Department for Environment Water and Natural Resources (formerly Dep. for Environment and Heritage)</td>
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<td>EPBC</td>
<td>Environment and Biodiversity Conservation Act 1999 (Commonwealth Government)</td>
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<td>Eyre Peninsula Natural Resources Management Board</td>
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<tr>
<td>GA</td>
<td>Greening Australia</td>
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<tr>
<td>KEA</td>
<td>Key Ecological Attribute</td>
</tr>
<tr>
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<td>Nature Conservation Society of SA</td>
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<tr>
<td>NPWS</td>
<td>National Parks and Wildlife Service</td>
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<tr>
<td>NRM</td>
<td>Natural Resources Management</td>
</tr>
<tr>
<td>ssp</td>
<td>Sub-species group conservation significance</td>
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<td>TNC</td>
<td>The Nature Conservancy</td>
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<td>TWS</td>
<td>The Wilderness Society</td>
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<tr>
<td>CE</td>
<td>Critically Endangered</td>
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<tr>
<td>E</td>
<td>Endangered</td>
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<td>V</td>
<td>Vulnerable</td>
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<td>R</td>
<td>Rare</td>
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1. Background

1.1. Introduction

This document summarises the progress of the WildEyre Conservation Action Planning (CAP) process to the 30th June 2016. The process commenced in late 2007 and the planning team has met regularly to develop and refine a conservation plan for the WildEyre region on western Eyre Peninsula (refer Appendix 3 for group members).

Achievements of the WildEyre project to date include:

- the development of a comprehensive Conservation Action Plan with spatial prioritisation for all major on-ground works programs based on local expert knowledge as well as GIS analysis
- project logo, promotional material and website (video presentation under development)
- detailed carbon modelling for the region (completed by Trevor Hobbs from DEWNR) and production of a fact sheet for local landholders
- significant media coverage
- memorandum of understanding between key partner organisations and successful joint delivery of programs like the Biodiversity Fund
- major on-ground works programs commenced including coastal weed control (all core Boxthorn infestations along several hundred kilometres of coastline), stewardship program to conserve Sheoak Grassy Woodlands and large-scale revegetation of Sheoak grassy woodland in priority areas in Lake Newland Conservation Park, Venus Bay Conservation Park, Lake Hamilton area and AWC’s Dakalanta property
- involvement of Traditional Owner groups in the program, particularly the Ceduna Aboriginal Corporation through on-ground activities such as seed collection and weed control
- successful funding applications totalling in excess of $7M from the Caring for Our Country Program, Biodiversity Fund and Native Vegetation Council Significant Environmental Benefits Fund
- implementation of a landscape monitoring program (woodland birds, native vegetation condition) incorporating both status monitoring against most major vegetation types and performance monitoring for all major on-ground works programs.

1.1.1. Conservation Action Planning (CAP)

The planning process for the WildEyre Project uses the Conservation Action Planning (CAP) framework developed by the US-based conservation group The Nature Conservancy www.nature.org as its basis. This framework is widely used in the development of international conservation projects and is becoming more widely adopted in Australia for planning large scale conservation projects with multiple stakeholders. One of the underpinning goals of CAP planning is to move conservation projects from the site scale (10’s or 100’s of hectares) to the conservation and preservation of functional landscapes (100,000’s hectares) which are able to sustain biodiversity at an eco-regional scale (Low 2003).

The CAP process typically involves a series of conservation planning workshops with 5-10 participants from multiple organisations. The process is facilitated by a trained CAP coach and uses a standard step-by-step methodology (refer Low 2003) and an Excel-based program, or Miradi software, to guide participants through the development of a 1st iteration landscape conservation plan.

Whilst built on solid scientific principles, the approach recognises that there are often large gaps in ecological knowledge and data, and hence a strong on-going adaptive management ethic is implied throughout the process. It also recognises that a large amount of knowledge exists with local landholders and conservation practitioners, and therefore incorporates local practitioner input into the planning process.

The major steps in the CAP process are:

- an analysis of the regional context in which conservation is to occur;
- the identification of conservation assets and nested assets (i.e. ecosystems, communities and species);
• an analysis of the viability (i.e. health) of the conservation assets and the key threats;
• the development of measurable objectives to achieve the long-term conservation of the assets;
• the development of conservation strategies, action steps and key programs to achieve the conservation objectives;
• the development of a practical monitoring and evaluation program and adaptive management framework.
1. Background

1.2 Regional Planning Context

The WildEyre planning process is conducted at a sub-NRM regional scale. The conservation objectives and strategies developed complement existing regional NRM plans and strategies and contribute to national and state funding priorities (refer Table 1 below).

1.2.1 Eyre Peninsula Natural Resources Management (NRM) Board Region

The Eyre Peninsula NRM region extends from Whyalla in the north-east, Port Lincoln in the south and to the edge of the Nullarbor Plain in the north-west. The region contains approximately one third of South Australia’s coastline including 254 offshore islands. In total the NRM region covers in excess of 8 million hectares of land and sea and supports a population of approximately 55,000 people (www.epnrm.sa.gov.au).

The WildEyre planning area makes up approximately 15% of the NRM region (refer to Map 1).

1.2.2 Biodiversity Conservation Organisations

The principle organisations involved in biodiversity conservation in the region are the Eyre Peninsula Natural Resources Management Board and the State Government Department for Environment, Water and Natural Resources (DEWNR). These organisations underwent a merger in 2010/11 and now function primarily as one organisation.

Other organisations involved in biodiversity conservation in the region include local government (i.e. Streaky Bay, Elliston), non-government organisations (Australian Wildlife Conservancy, Nature Conservation Society of South Australia, The Wilderness Society, Australian Conservation Volunteers, Greening Australia), private landholders and community groups (e.g. Friends of Scale Bay).

Table 1: Existing Biodiversity Programs, Strategies and Legislation

<table>
<thead>
<tr>
<th>National</th>
<th>State (SA)</th>
<th>Regional (EP NRM)</th>
<th>National and State Legislation</th>
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<tr>
<td>Caring for Our Country</td>
<td>State Strategic Plan</td>
<td>Eyre Peninsula NRM Plan</td>
<td>Environment Protection and Biodiversity Conservation Act 1999 (National)</td>
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<tr>
<td>Biodiversity Fund</td>
<td>Tackling Climate Change</td>
<td>Eyre Peninsula Biodiversity Plan</td>
<td>National Parks and Wildlife Act 1972 (SA)</td>
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<td>Clean Energy Futures Program</td>
<td>State Natural Resources Management Plan</td>
<td>DENR Biodiversity Strategy</td>
<td>Native Vegetation Act 1991 (SA)</td>
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<td>National Water Initiative</td>
<td>No Species Loss</td>
<td>Threatened Species Recovery Plans</td>
<td>Natural Resources Management Act 2004 (SA)</td>
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1. Background

Map 1: Eyre Peninsula NRM Boundary and location of WildEyre project
1. Background

1.3 WildEyre Project Area

The WildEyre planning area covers over 1.2 million hectares of western Eyre Peninsula including the coastal townships of Sheringa and Elliston in the south, Streaky Bay in the north and extending inland to the large Wilderness Protection Areas of Hincks and Hambidge (refer Map 2). The area contains some of the largest intact and contiguous stretches of bushland in South Australia’s agricultural districts, supporting numerous national and state threatened plant and animal species. The region is recognised as of state and national significance for biodiversity conservation being a focus of the State Government’s NatureLinks Program and a priority area for The Wilderness Society’s WildCountry vision.

1.3.1 Regional Landforms

The planning area largely follows the Talia IBRA subregion (Interim Biogeographic Regionalisation of Australia) which is characterised by extensive undulating dunefields and calcrite near the surface. Further inland and to the north the land surface is characterised by parallel sand dune systems associated with the Eyre Mallee IBRA Subregion. Other landforms of note include the geologically recent coastal sand dunes at Lake Newland, the sheltered low-energy coasts of Venus Bay, Sceale Bay and Streaky Bay and the high-energy exposed cliffs along much of the remaining coast. Granite outcrops are scattered through the central and northern part of the region and major features include Mount Wedge, Mount Damper and Murphy’s Haystack.

1.3.2 Climate and Rainfall

The area is subject to a typical Mediterranean climate with mild wet winters and hot dry summers. Annual average rainfall decreases from south to north with Elliston recorded at 427mm and Streaky Bay with 380 mm. Rainfall also decreases toward the drier interior of the peninsula with Wudinna (just east of the project area) recording an average annual rainfall of approximately 268 mm. Temperatures, winds and rainfall are heavily influenced by the open coast along the western part of the region.

1.3.4 European Land Use History

European settlement began at Port Lincoln in 1839 and pastoral occupation extended slowly along the coasts until the 1890s (www.atlas.sa.gov.au). Agricultural expansion occurred from the 1930s and accelerated in the post Second World War period due to an increased use of superphosphate and medic pastures which improved soil fertility and grain yields. The majority of native vegetation clearance occurred in the post Second World War period which is relatively recent in the context of the southern agricultural region of South Australia.

1.3.5 Native Vegetation

The western Eyre Peninsula contains a high proportion of native vegetation cover compared with many other agricultural districts of South Australia, principally due to the unsuitability of the limestone country for agriculture. Native vegetation covers over 730,000 hectares or 60% of the planning area with the majority in the central parts of the region away from the coast (refer to Map 2). The dominant vegetation types are mallee associations on deep sand in central Eyre Peninsula (dominated by *Eucalyptus incrassata, E. yalatensis, E. dumosa*), on limestone in sub-coastal areas (*Eucalyptus diversifolia*) and in inland limestone areas (*E. dumosa, E. oleosa, E. gracilis, E. socialis, E. brachycaulys*).

Woodlands of Mallee Box (*Eucalyptus porosa*), Native Pine (*Callitris gracilis*) and Drooping Sheoak (*Allocasuarina verticillata*) were once a dominant vegetation type in the region. However Drooping Sheoak Woodlands in particular have declined significantly in extent since European settlement. The understorey of these woodlands is often dominated by grasses and sedges with a scattered shrub layer, although it does vary from predominantly grassy to predominantly sedges to densely shrubby. Most of the open ground with native grasses and sedges in the region probably once supported an overstorey of Sheoak, Native Pine or Mallee Box.
1. Background

Map 2: Native Vegetation Cover in the WildEyre Project Area
1. Background

Coastal areas support tall shrublands comprised of *Olearia axillaris*, with *Leucopogon parviflorus*, *Rhagodia candelleana*, *Acacia aneaps* (now *Acacia* sp. ‘Winged’), *Acacia cupularis* and *Templetonia retusa* over smaller coastal shrubs, climbers and groundcovers. Rear dunes often support Drooping Sheoak (* Allocasuarina verticillata*) woodlands with tall shrubs including those listed above and other species such as *Acacia nematophylla*. A large example of this vegetation type can be found at Lake Newland Conservation Park between Elliston and Venus Bay.

The margins of coastal wetlands and inlets are dominated by samphires with *Sarcocornia* spp. in regularly inundated zones and *Tecticornia* spp. in less frequently inundated zones. Swamp Paperbarks (*Melaleuca halmaturorum*) also occur on wetland margins adjacent to *Gahnia filum* sedgelands. Other common salt-tolerant species include *Wilsonia humilis*, *Suada australis*, *Samolus repens*, *Maireana oppositifolia* and *Hemichroa pentandra*. Pockets of River Red Gum (*Eucalyptus camaldulensis var. camaldulensis*) woodland also occur amongst limestone where trees can access groundwater or where surface water collects. Commonly associated shrubs include Scarlet Bottlebrush (*Callistemon rugulosus*) and Native Hibiscus (*Alyogyne heugelii*).

Vegetation communities of conservation significance include Drooping Sheoak (* Allocasuarina verticillata*) Grassy Low Woodland (not including coastal woodland on sand), Thatching Grass (*Gahnia filum*) Sedgeland and Cummins Mallee (*Eucalyptus penninsularis*) +/- White Mallee (*E. dumosa*) Mallee

**Flora species of conservation significance**

A high diversity of plant species is found in the project area including at least 118 species which are Endangered, Vulnerable or Rare at the state level under National Parks and Wildlife Act 1974, and at least 16 which are rated nationally threatened under the Environment Protection and Biodiversity Conservation Act 1996. Selected threatened flora records are displayed in Map 3 and Appendix 1 contains a complete list of state and nationally rated flora species.

Gillam and Urban (2009) analysed the conservation status of plant species on Eyre Peninsula by IBRA by subregion and in addition to the regional conservation status, trends show that 14 species in the Talia subregion and 13 species in the Eyre Mallee subregion are considered as definitely declining, and 131 species and 143 species respectively are considered as probable declining in distribution and/or abundance.

1.3.6 Fauna

According to the biodiversity plan for Eyre Peninsula (DEH 2002) over 475 vertebrate fauna species have been recorded on Eyre Peninsula. It is difficult to estimate the number of species which were historically found in the WildEyre region but it is known that many species have declined or disappeared due to the impacts of vegetation clearance/habitat loss and the introduction of feral predators (foxes and cats).

Notable remaining fauna species include Australian Sea-lions (*Neophoca cinerea*) along the coast, birds such as the Malleeowl (*Leipoa ocellata*), White-bellied Sea-Eagle (*Haliaeetus leucogaster*) and Yellow-tailed Black Cockatoo (*Calyptrhynchus funereus*) and mammals such as the Sandhill Dunnart (*Sminthopsis psammophila*) and Greater Stick-nest Rat (*Leporillus conditor*). The region is also notable for the reintroduction of Greater Bilby (*Macrotis lagotis*) and Brush-tailed Bettong (*Bettongia penicillata*) to offshore islands and within Venus Bay Conservation Park. Also of note is the population of Pearson’s Black-footed Rock-wallaby (*Petrogale lateralis* Pearsoni) on Pearson Island which is one of only 5 populations nationally occurring on offshore islands (DEH 2002).

The DEWR spatial database records show over 60 vertebrate fauna species of state or national conservation significance currently occur within the region. This number does not include whale species which frequently visit the coast or some of the highly mobile pelagic birds such as albatross species. Selected threatened fauna records are displayed in Map 3 and Appendix 2 contains a complete list of state and nationally rated fauna species. Gillam and Urban (2009) also analysed the conservation status of vertebrate fauna species on Eyre Peninsula by IBRA. In addition to the regional conservation status, trends show that 20 species in the Talia subregion and 10 species in the Eyre Mallee subregion are considered in definite decline and 52 species and 54 species respectively are considered in probable decline.
1. Background

**Map 3: Selected Threatened Species Records (DENR 2007)**
1. Background

1.4 Social Context

1.4.1 Population

The project area is sparsely populated compared with many other areas in the southern agricultural districts of South Australia. The Local Government Areas of Streaky Bay and Elliston comprise most of the project area and in 2006 supported 2,024 and 1,132 person respectively (www.abs.gov.au). The main population centres are the coastal towns of Streaky Bay which recorded 1059 persons within the urban locality in 2006, Elliston (201 persons), and Venus Bay (139 persons). The workforce is predominantly agricultural with 42% of the workforce in the District Council of Elliston and 27.8% of the workforce in the District Council of Streaky Bay identifying their main occupation as sheep, beef cattle or grain farming.

Table 5: Selected Demographic Statistics from the 2006 Census

<table>
<thead>
<tr>
<th>Location (LGA)</th>
<th>Population 2006</th>
<th>Labour Force</th>
<th>Farming Labour Force</th>
<th>% Involved Farming</th>
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<tr>
<td>Streaky Bay</td>
<td>2024</td>
<td>1018</td>
<td>273</td>
<td>27.8%</td>
</tr>
<tr>
<td>Elliston</td>
<td>1132</td>
<td>579</td>
<td>235</td>
<td>42%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3156</td>
<td>1597</td>
<td>508</td>
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1.4.2 Aboriginal Communities

Traditional owners retain strong connections to country in the WildEyre landscape and evidence of Aboriginal occupation exists throughout the project area, including stone artefacts, campsites, middens, stone arrangements, burial sites, paintings and engravings. Furthermore, many Aboriginal people live within or regularly visit the area.

The WildEyre project area covers three existing Native Title claims: Wirangu No. 2; Nauo-Barngarla and Barngarla. The Ceduna Aboriginal Corporation has developed strong links with the WildEyre project in recent years, participating in seed collection, weed control and other on-ground activities.

1.4.3 Current Land Management and Ownership

Private landholdings in the region were analysed by The Wilderness Society and some of the results are shown in Map 4. There are between 500 and 600 landholders in the WildEyre region with most properties between 1,000 hectares and 5,000 hectares.

The project area also includes land under 6 local government jurisdictions, however the vast majority falls under the District Council of Streaky Bay in the north and the District Council of Elliston in the south. The area also contains 24 conservation reserves managed by DEWNR (including offshore islands) and 83 Heritage Agreements totalling approximately 103,000 hectares or 8.5% of the area.
1. Background

Map 4: Landholdings in the Project Area.

WildEyre Landholdings >10ha

The coloured polygons represent land parcels with unique landholder ID numbers as stored by the State Land Administration Branch. Actual sizes of landholdings may differ due to families or partnerships which operate and manage multiple lots with differing ownership details.
### 2. Identification of Conservation Assets

#### 2.1. Methodology for Identifying Conservation Assets

The first step in the conservation action planning process involves the identification of a small number of focal conservation assets (i.e. ecosystems, communities or species) that collectively represent the biodiversity of a region. The explicit assumption within this process is that by conserving representative examples of broad-scale communities and ecosystems, the majority of species will also be conserved. The list of focal conservation assets therefore need not be long and exhaustive; rather, it should be short and representative. In general, the CAP methodology recommends that no more than eight conservation assets are selected to be the focus of a landscape conservation program.

The asset selection process begins by identifying the coarse-scale ecosystems and communities for conservation. The issue of whether to lump individual ecosystems and communities together or split into individual conservation assets is often a difficult one. In general, ecosystems and communities are lumped together if they:

- co-occur across the landscape;
- share similar ecological processes;
- share similar threats.

The next step is to screen for species and communities occurring at smaller scales that are not well “nested” within the broader set of ecosystems or communities; that is, those species and communities whose conservation requirements are not met through the conservation of the coarse-scale assets (as suggested by Noss et al. 1999; Margules and Pressey 2000; MacNally et al. 2002). This approach is known as the coarse filter – fine filter approach (Groves 2003).

Examples of species often not captured by coarse-scale assets include:

- rare, threatened and endemic species;
- species with highly disjunct (spatially separate) populations or restricted distributions;
- keystone or highly interactive species (those that have a disproportionate influence on the structure and ecological function of the community);
- wide-ranging species.

Species and communities that fall into the above categories may be captured by threatened species recovery programs or may need to be considered as separate conservation assets.

**Source:** Adapted from Low (2003)

#### 2.2. Conservation Assets of the WildEyre Planning Area

Ten focal conservation assets have been identified by the WildEyre planning team. Each conservation asset is associated with numerous nested assets (i.e. individual communities, species assemblages and threatened species) which help further define the asset and provide a focus for conservation efforts. The spatial distribution of the assets is presented in Map 4.

1. Sandy Coasts and Dunes
2. Rocky Coasts and Cliffs
3. Sheltered Coastal Bays
4. Sub-coastal Wetlands
5. Sub-coastal & Limestone Plains Mallee
6. Sand Mallee (including dune top remnants)
7. Red Gum Woodlands
8. Mallee Box and Native Pine Woodlands
9. Sheoak Grassy Woodlands (includes Native Grasslands and Low Sedgelands)
10. Granite Outcrops
2. Identification of Conservation Assets

2.1.1. Sandy Coasts and Dunes

Sandy coasts and dunes refer to the high energy beach and dune systems on the western Eyre Peninsula. The most notable example occurs at Lake Newland Conservation Park where almost 6,000 hectares of tall dunes form a barrier between the coast and a lowland wetland system. Smaller coastal dunes occur between Elliston and Sheringa and in the Venus Bay to Streaky Bay region. These areas provide critical habitat for Hooded Plovers, Fairy Terns and a range of other coastal bird species. Near-shore waters support sand and sea-weed mosaics which provide important habitat for marine fish species.

<table>
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<th>Nested Assets</th>
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<td>Coastal Dune Shrublands (Olearia axillaris, Leucopogon parviflorus)</td>
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<td>Threatened Birds</td>
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<tr>
<td>Hooded Plover (Thinornis rubricollis)</td>
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<tr>
<td>Threatened Birds</td>
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<tr>
<td>Fairy Tern (Sterna nereis)</td>
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<td>Threatened Reptiles</td>
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<td>Beach Slider (Lerista arenicola)</td>
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<td>Threatened Reptiles</td>
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<td></td>
</tr>
<tr>
<td>Heath Monitor / Goanna (Varanus rosenbergii)</td>
<td></td>
<td>R</td>
</tr>
<tr>
<td>Other Species of Note</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pacific Gull (Larus pacificus) note: largest nesting colony</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Species of Note</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little Penguin (Eudyptula minor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shore birds (Plovers, Sandpipers, Sanderlings, Godwit, Terns, Stints, Knots, Oyster-catchers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish &amp; shellfish (KG Whiting, Flathead, School Shark, Razorfish, Cockles)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.2. Rocky Coasts and Cliffs

Rocky coasts and cliffs occur in high energy environments and are characterised by tall cliffs and rocky shore platforms. These areas support diverse low shrublands on clifftops and provide important habitat for threatened species such as the White-bellied Sea-Eagle (Haliaeetus leucogaster), Eastern Osprey (Pandion haliaetus) and West Coast Mintbush (Prostanthera calycina). The rocky shoreline also provides critical habitat for the nationally vulnerable Australian Sea-lion (Neophoca cinerea).

<table>
<thead>
<tr>
<th>Nested Assets</th>
<th>AUS</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Communities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Cliff Shrubland (Leucophyta brownii, Lasopetalum discolour)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threatened Mammals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian Sea-Lion (Neophoca cinerea)</td>
<td></td>
<td>VU</td>
</tr>
<tr>
<td>Threatened Birds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White Bellied Sea-Eagle (Haliaeetus leucogaster)</td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>Threatened Birds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osprey (Pandion haliaetus)</td>
<td></td>
<td>R</td>
</tr>
<tr>
<td>Threatened Birds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rock Parrot (Neophema petrophila)</td>
<td></td>
<td>R</td>
</tr>
<tr>
<td>Threatened Plants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Coast Mintbush (Prostanthera calycina) – EP Endemic</td>
<td></td>
<td>VU</td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seals, Sea Lions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Identification of Conservation Assets

Map 5: Conservation Assets of the WildEyre Project Area

Map 6: Pre-European Conservation Assets of the WildEyre Project Area
2. Identification of Conservation Assets

2.1.3. Sheltered Coastal Bays

Sheltered coastal bays are low-energy environments which provide vital habitats for shorebirds, waterbirds, fish and marine mammals. A mix of vegetation types occur around these bays including areas of samphire low shrubland and small stands of Grey Mangrove (*Avicennia marina*). Important coastal bays include Bairds Bay, Streaky Bay and Venus Bay.

<table>
<thead>
<tr>
<th>Nested Assets</th>
<th>AUS</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Communities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Mangroves (<em>Avicennia marina</em>) Low forests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Samphire (<em>Halosarcia sp. Scleroastea sp, Sarcocornia sp.</em>) shrublands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal dune (<em>Olearia axillaris</em>, <em>Leucopogon parviflorus</em>) shrubland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Cliff (<em>Leucophyta brownii, Lasiopetalum sp</em>) Low shrubland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threatened Mammals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian Sea-Lion (<em>Neophoca cinerea</em>)</td>
<td>VU</td>
<td></td>
</tr>
<tr>
<td>Threatened Plants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beaded Samphire (<em>Halosarcia flabelliformis</em>) check distribution?</td>
<td>VU</td>
<td></td>
</tr>
<tr>
<td>Threatened Birds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slender-billed Thornbill (<em>Acanthiza iredalei</em>) (possible occurrence)</td>
<td>VU</td>
<td></td>
</tr>
<tr>
<td>Eastern Curlew (<em>Numenius madagascariensis</em>)</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shore birds (Plovers, Sandpipers, Sanderlings, Godwit, Terns, Stints, Knots, Oyster-catchers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water birds (Ducks, Pelicans, Swans, Cormorant, Darters, Egrets, Heron)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish &amp; shellfish (KG Whiting, Flathead, School Shark, Razorfish, Cockles)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seals, Sea Lions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMPORTANT WETLANDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bairds Bay, Streaky Bay, Point Labatt</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.4. Sub-coastal Wetlands

Sub-coastal wetlands occur adjacent to coastal dunes and cliffs and include nationally important areas such as Lake Newland and Lake Hamilton. These wetlands support Salt Paperbark low forests (*Melaleuca halmaturorum, M. brevifolia*), low samphire shrublands and state vulnerable Thatching Grass (*Gahnia filum*) sedgelands. Sub-coastal wetlands provide critical habitat for many migratory wading birds and Lake Newland is internationally recognised as a valuable migratory bird habitat.

<table>
<thead>
<tr>
<th>Nested Assets</th>
<th>AUS</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Communities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saltwater Paperbark (<em>Melaleuca halmaturorum, M. brevifolia</em>) forest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thatching Grass (<em>Gahnia filum</em>) Sedgelands</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Samphire Low Shrublands, Nitre bush (<em>Nitraria billardierei</em>) Shrublands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slender-billed Thornbill (<em>Acanthiza iredalei</em>) (possible occurrence)</td>
<td>VU</td>
<td></td>
</tr>
<tr>
<td>Eastern Curlew (<em>Numenius madagascariensis</em>)</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Yellowish sedge-skipper (<em>Hesperilla flavescens flavia</em>)</td>
<td>EN</td>
<td></td>
</tr>
<tr>
<td>Shore birds (Plovers, Sandpipers, Sanderlings, Godwit, Terns, Stints, Knots, Oyster-catchers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water birds (Ducks, Pelicans, Swans, Cormorant, Darters, Egrets, Heron)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMPORTANT WETLANDS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Newland, Lake Hamilton</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Identification of Conservation Assets

2.1.5. Sub-coastal and Limestone Plains Mallee

Sub-coastal and Limestone Plains Mallee associations comprise the majority of the remnant native vegetation in the project area and support a high diversity of flora and fauna species. Flora species of note include the nationally vulnerable West Coast Mintbush (*Prostanthera calycina*). Notable fauna species include the nationally vulnerable Malleefowl (*Leipoa ocellata*), Greater Long-eared Bat (*Nyctophilus timoriensis*) and a number of small mammal species such as the Western Pygmy Possum (*Cercartetus concinnus*).

<table>
<thead>
<tr>
<th>Nested Assets</th>
<th>AUS</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Communities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Mallee (<em>Eucalyptus diversfolia</em>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limestone Plains Mallee (<em>E. gracilis, E. oleosa, E. dumosa, E. brachycalyx</em>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater Long-eared Bat (<em>Nyctophilus timoriensis</em>)</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>Malleefowl (<em>Leipoa ocellata</em>)</td>
<td>VU</td>
<td>V</td>
</tr>
<tr>
<td>EP Yellow Tailed Black Cockatoo (<em>Calyptorhynchus funereus</em>)</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Heath Goanna (<em>Varanus rosenbergi</em>)</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Carpet Python (<em>Morelia spilota</em>)</td>
<td>V</td>
<td></td>
</tr>
<tr>
<td>West Coast Mintbush (<em>Prostanthera calycina</em>) EP Endemic</td>
<td>VU</td>
<td>V</td>
</tr>
<tr>
<td>Goldsack’s Leek-orchid (<em>Prasophyllum goldsackii</em>)</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Yellow Swainson-pea (<em>Swainsona pyrophila</em>)</td>
<td>EN</td>
<td>R</td>
</tr>
<tr>
<td>Small Mammals (Pygmy Possum, Dunnarts, Ningaui, Hopping-mouse)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mammals (Western Grey Kangaroo, Bats, Echidnas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reptiles (Goannas, skinks, Dragons, Geckos, Snakes, Pythons)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodlands Birds, Ground-dwelling Birds (Emus, Quail)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.6. Sand Mallee (including dune top remnants)

Sand mallee occurs on light sandy soils in the eastern parts of the region. Dominant over-storey species include *Eucalyptus incrassata, E. leptophylla, E. dumosa* and *E. socialis*. Shrubland areas are dominated by Shubby Cypress-pine (*Callitris verrucosa*) and Broombush (*Melaleuca uncinata*). Large areas of this habitat type occur in Hinks and Hambidge wilderness areas and provide important habitat for nationally threatened fauna such as the Mallee Fowl and the Sandhill Dunnart. Sand mallee areas outside of the formal reserve system are heavily fragmented and occur as narrow strips on inland dunes.

<table>
<thead>
<tr>
<th>Nested Assets</th>
<th>AUS</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand Mallee (<em>Eucalyptus incrassata, E. leptophylla, Callitris verrucosa</em>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandhill Dunnart (<em>Smithnopsis psammophila</em>)</td>
<td>EN</td>
<td>E</td>
</tr>
<tr>
<td>Malleefowl (<em>Leipoa ocellata</em>)</td>
<td>VU</td>
<td></td>
</tr>
<tr>
<td>EP Yellow Tailed Black Cockatoo (<em>Calyptorhynchus funereus</em>)</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Dwarf four-toed Slider (<em>Lerista distinguenda</em>)</td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Sand Spider Orchid (<em>caladenia sp. Southeast</em>)</td>
<td>EN</td>
<td></td>
</tr>
<tr>
<td>Yellow Swainson-pea (<em>Swainsona pyrophila</em>)</td>
<td>EN</td>
<td>R</td>
</tr>
<tr>
<td>Small Mammals (Pygmy Possum, Dunnarts, Ningaui, Hopping-mouse)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mammals (Western Grey Kangaroo, Bats, Echidnas)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reptiles (Goannas, skinks, Dragons, Geckos, Snakes, Pythons)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodland Birds, Ground-dwelling Birds (Emus, Quail)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Identification of Conservation Assets

2.1.7. Red Gum Woodlands

Red Gum Woodlands are a relatively uncommon habitat type with a patchy distribution in the project area. The main occurrence is on limestone soils east of Elliston and toward Bascome Well Conservation Park. These woodlands are commonly associated with shallow depressions in the limestone where surface water may collect or groundwater is easily accessible. Red Gum Woodlands provide important habitat for woodland birds.

<table>
<thead>
<tr>
<th>Nested Assets</th>
<th>AUS</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Communities</td>
<td>Red Gum (<em>Eucalyptus camaldulensis</em>) Woodland</td>
<td></td>
</tr>
<tr>
<td>Threatened Birds</td>
<td>Plains-wanderer (<em>Pediononus torquatus</em>) – (unlikely but possible)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Mammals (Hairy-nosed Wombat, Western Grey Kangaroo, Brushtail Possum, Bats, Echidnas)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Reptiles (Goannas, skinks, Dragons, Geckos, Snakes, Pythons)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Birds of Prey (Hawks, Eagles, Kites, Falcons, Kestrels)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Woodland Birds (Pigeons, Ringnecks, Budgerigars, Cuckoos, Owls, Frogmouths, Kingfishers, Bee-eaters, Tree-creepers, Wrens, Pardalotes, Thornbills, Honeyeaters, Wattlebird, Chats, Robins, Babblers, Whistlers, Flycatchers, Wagtails, Woodswallow, Magpie, Ravens, Swallows)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Ground-dwelling Birds (Emus, Quail)</td>
<td></td>
</tr>
</tbody>
</table>

2.1.8. Mallee Box and Native Pine Woodlands

Mallee Box Woodlands occur throughout the project area with Native Pine Woodlands more restricted in their distribution. This vegetation type generally occurs with an open understorey dominated by grasses, sedges and low shrubs. Livestock grazing is common within this vegetation type.

<table>
<thead>
<tr>
<th>Nested Assets</th>
<th>AUS</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Communities</td>
<td>Native Pine (<em>Callitris gracilis</em>) Woodland</td>
<td></td>
</tr>
<tr>
<td>Plant Communities</td>
<td>Mallee Box (<em>Eucalyptus porosa</em>) Low woodlands / mallee</td>
<td></td>
</tr>
<tr>
<td>Threatened Birds</td>
<td>Plains-wanderer (<em>Pediononus torquatus</em>)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Mammals (Hairy-nosed Wombat, Western Grey Kangaroo, Bats, Brushtail Possum, Echidnas)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Reptiles (Goannas, Skinks, Dragons, Geckos, Snakes)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Birds of Prey (Hawks, Eagles, Kites, Falcons, Kestrels)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Birds (Pigeons, Ringnecks, Budgerigars, Cuckoos, Owls, Frogmouths, Kingfishers, Bee-eaters, Tree-creepers, Wrens, Pardalotes, Thornbills, Honeyeaters, Wattlebird, Chats, Robins, Babblers, Whistlers, Flycatchers, Wagtails, Woodswallow, Magpie, Ravens, Swallows)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Ground-dwelling Birds (Emus, Quail)</td>
<td></td>
</tr>
</tbody>
</table>
2. Identification of Conservation Assets

2.1.9 Sheoak Grassy Woodlands

Sheoak Grassy Woodlands occur on shallow limestone soils with an understorey dominated by native grasses, sedges, herbs and low shrubs. This habitat type has been heavily cleared and fragmented in the project area with approximately 5% of its original distribution remaining. Most remnant areas are in private ownership and subject to livestock grazing. Sheoak Grassy Woodlands provide important habitat to a range of declining woodland bird species. This asset includes treeless native grasslands and low sedgelands that are dominated by Spear-grass (*Austrostipa* spp.), Wallaby Grass (*Austrodanthonia* spp.) and Black-grass (*Gahnia lanigera*). It is likely that the vast majority of these grasslands formerly had a sheoak overstorey that has been lost over time through sustained grazing pressure. Native grasslands provide habitat for the nationally vulnerable Plains-wanderer (*Pediononus torquatus*).

<table>
<thead>
<tr>
<th>Nested Assets</th>
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</thead>
<tbody>
<tr>
<td>Plant Communities</td>
<td>Sheoak (<em>Allocasuarina verticillata</em>) Grassy woodlands</td>
<td>V</td>
</tr>
<tr>
<td>Threatened Birds</td>
<td>Plains-wanderer (<em>Pediononus torquatus</em>) – (unlikely but possible)</td>
<td>VU E</td>
</tr>
<tr>
<td>Threatened Birds</td>
<td>Diamond Firetail (<em>Stagonopleura guttata</em>)</td>
<td>V</td>
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<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Mammals (Hairy-nosed Wombat, Western Grey Kangaroo, Bats, Brushtail Possum, Echidnas)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Reptiles (Goannas, Skinks, Dragons, Geckos, Snakes)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Birds of Prey (Hawks, Eagles, Kites, Falcons, Kestrels)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Woodland Birds (Pigeons, Ringnecks, Budgerigars, Cuckoos, Owls, Frogmouths, Kingfishers, Bee-eaters, Tree-creepers, Wrens, Pardalotes, Thornbills, Honeyeaters, Wattlebird, Chats, Robins, Babblers, Whistlers, Flycatchers, Wagtails, Woodswallow, Magpie, Ravens, Swallows)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Ground-dwelling Birds (Emus, Quail)</td>
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</tr>
</tbody>
</table>
2. Identification of Conservation Assets

2.1.10 Granite Outcrops

Granite outcrops and inselbergs in the project area are small and unique environments. There is a clear link between the presence of granite and the distribution of specific plant species and vegetation communities. This includes Nodding Grass lilly (Stypandra glauca), Needle leaf honey myrtle (Melaleuca armillaris ssp akineta) and woodlands of Mallee Box (Eucalyptus porosa) and Native Pine (Callitris gracilis). It is also suspected that granite outcrops support unique assemblages of fauna species (e.g. reptiles). Important granite outcrops include Murphy’s Haystack, Snaggley Rock, Cocata Hill, The Kurbla, Mt Cooper, Mt Hall, Ucontitchie Hill and Mt Wedge. There is a band of 10 to 15 granite outcrops running north to south (i.e. Murphy’s – northern, Mt Wedge – southern) in the project area with many in private ownership.

<table>
<thead>
<tr>
<th>Nested Assets</th>
<th>AUS</th>
<th>SA</th>
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</thead>
<tbody>
<tr>
<td>Plant Communities</td>
<td>Mallee Box (Eucalyptus porosa) Woodlands</td>
<td></td>
</tr>
<tr>
<td>Plant Communities</td>
<td>Native Pine (Callitris gracilis) Woodlands</td>
<td></td>
</tr>
<tr>
<td>Threatened Reptiles</td>
<td>Carpet Python (Morelia spilota)</td>
<td>V</td>
</tr>
<tr>
<td>Threatened Plants</td>
<td>Needle-leaf Honey-myrtle (Melaleuca armillaris ssp akineta)</td>
<td>R</td>
</tr>
<tr>
<td>Threatened Plants</td>
<td>Sandalwood (Santalum spicatum)</td>
<td>V</td>
</tr>
<tr>
<td>Threatened Plants</td>
<td>Granite Mudwart (Limosella granitica)</td>
<td>VU</td>
</tr>
<tr>
<td>Threatened Plants</td>
<td>Nodding Grass Lily (Stypandra glauca)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Mammals (Hairy-nosed Wombat, Western Grey Kangaroo, Echidna)</td>
<td>VU</td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Birds of Prey (Hawks, Eagles, Kites, Falcons, Kestrels)</td>
<td></td>
</tr>
<tr>
<td>SPECIES ASSEMBLAGE</td>
<td>Reptiles (Goannas, Skinks, Dragons, Geckos, Snakes)</td>
<td></td>
</tr>
<tr>
<td>KEY LOCATIONS</td>
<td>Murphy’s Haystack, Snaggley Rock, Cocata Hill, The Kurbla, Mt Cooper, Mt Hall, Ucontitchie Hill and Mt Wedge</td>
<td></td>
</tr>
</tbody>
</table>
3. Viability of Conservation Assets

3.1. Methodology for Assessing the Viability of Conservation Assets

The second step in the conservation action planning process is an assessment of the viability (or overall health) of the conservation assets. This is a four step process.

**Step 1** Identification of a small number (3 - 5) of key ecological attributes for each conservation asset.
Key ecological attributes represent the critical factors required for the long term viability of the conservation assets. These factors relate to the size, condition and landscape context of the assets and include attributes such as hydrological regimes, fire regimes, water quality, vegetation condition, fauna diversity, total remnant area and the size and configuration of patches (refer table 3).

**Step 2** Identification of appropriate monitoring indicators for each key ecological attribute.
Indicators are easily measurable factors closely related to the status of the key ecological attributes. For example, the frequency, duration and timing of flood events may be an appropriate monitoring indicator for hydrological regimes. Similarly, the presence or absence of a particular habitat-sensitive species may be an appropriate indicator for species diversity or habitat condition.

**Step 3** Development of criteria for rating the current status of each indicator.
The development of criteria for rating the status of each indicator is an iterative process that typically starts as a simple qualitative assessment (e.g. lots, some, few) and is progressively developed into more refined, numeric value ranges (e.g. 1,000 megalitres of water for 3 months during late spring).

**Step 4** Ranking the current status of each indicator to determine the overall viability of the conservation assets.
The final step in assessing the viability of the conservation assets is to rank the current status of each indicator based on the criteria for poor, fair, good and very good (described below). These individual ratings are rolled up in the Conservation Action Planning software to provide an assessment of the overall viability for each asset (refer table 4).

**POOR** - allowing the factor to remain in this condition for an extended period of time will make restoration or preventing extirpation practically impossible.
**FAIR** – the factor is outside its range of acceptable variation and requires human intervention. If unchecked, the target will be vulnerable to serious degradation.
**GOOD** – the factor is functioning within its range of acceptable variation; it may require some human intervention.
**VERY GOOD** – the factor is functioning at an ecologically desirable status, and requires little human intervention.

*Source: adapted from Low (2003)*

3.2. Viability of the Conservation Assets of the WildEyre Planning Area

The overall viability of the conservation assets, as assessed by the planning team, is displayed in Table 7. Viability was determined by identifying and rating the current status of the key ecological attributes of each conservation asset based on considerations of size, condition and landscape context (refer Table 6). These assessments were supported by existing monitoring data for some key ecological attributes, and in other cases were based purely on local expert opinion. The absence of quantitative data for assessing the viability of many key ecological attributes highlights a gap in the existing biodiversity monitoring program and an area for future development (refer section 7).

Table 7 shows that **Rocky Coasts and Cliffs**, **Sheltered Coastal Bays**, **Sub-coastal Limestone Plains Mallee**, **Sand Mallee** and **Mallee Box and Native Pine Woodlands** were assessed to be of good overall viability. The remainder of the conservation assets were assessed to be of fair overall viability with the exception of **Sheoak Grassy Woodlands** and **Sand Mallee Dune-top Remnants** which were assessed to be poor.

Map 7 shows a broad vegetation condition map produced during a priority area mapping project for the WildEyre region (Koch 2013).
3. Viability of Conservation Assets

Map 7: Broad assessment of vegetation condition for the WildEyre project area
Map 8: Analysis of landscape context (averaging focal statistics scores across 100m, 1km and 5km focal radii) for the WildEyre project area.

Figure 1: Mean neighbourhood score (expressed as a percentage of a perfect score) for each asset.
### Table 6: Key Ecological Attributes of Conservation Assets

<table>
<thead>
<tr>
<th>Conservation Asset</th>
<th>Landscape Context</th>
<th>Condition</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandy Coasts and Dunes</td>
<td>• Coastal dune processes</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Landscape connectivity</td>
<td>• Native Flora Condition</td>
<td></td>
</tr>
<tr>
<td>Rocky Coasts and Cliffs</td>
<td>• Landscape connectivity</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Native Flora Condition</td>
<td>• Total Area Remaining</td>
<td></td>
</tr>
<tr>
<td>Sheltered Coastal Bays</td>
<td>• Water Flows / Movement</td>
<td>• Native Fauna Condition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Water quality</td>
<td>• Native Flora Condition</td>
<td></td>
</tr>
<tr>
<td>Sub-coastal Wetlands</td>
<td>• Hydrological regime</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Landscape connectivity</td>
<td>• Native Flora Condition</td>
<td></td>
</tr>
<tr>
<td>Sub-coastal and Limestone Plains Mallee</td>
<td>• Appropriate Fire Regime</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Landscape connectivity</td>
<td>• Native Flora Condition</td>
<td></td>
</tr>
<tr>
<td>Sand Mallee</td>
<td>• Appropriate Fire Regime</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Landscape connectivity</td>
<td>• Native Flora Condition</td>
<td></td>
</tr>
<tr>
<td>Sand Mallee Dune-top Remnants</td>
<td>• Appropriate Fire Regime</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Landscape connectivity</td>
<td>• Native Flora Condition</td>
<td></td>
</tr>
<tr>
<td>Red Gum Woodlands</td>
<td>• Hydrological regime</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Landscape connectivity</td>
<td>• Native Flora Condition</td>
<td></td>
</tr>
<tr>
<td>Mallee Box and Native Pine Woodlands</td>
<td>• Landscape connectivity</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Native Flora Condition</td>
<td>• Total Area Remaining</td>
<td></td>
</tr>
<tr>
<td>Sheoak Grassy Woodlands</td>
<td>• Landscape connectivity</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Native Flora Condition</td>
<td>• Total Area Remaining</td>
<td></td>
</tr>
<tr>
<td>Native Grasslands / Low Sedgelands</td>
<td>• Landscape connectivity</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Native Flora Condition</td>
<td>• Total Area Remaining</td>
<td></td>
</tr>
<tr>
<td>Granite Outcrops</td>
<td>• Hydrological regime</td>
<td>• Native Fauna Condition</td>
<td>• Total Area Remaining</td>
</tr>
<tr>
<td></td>
<td>• Landscape connectivity</td>
<td>• Native Flora Condition</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Status of Key Ecological Attribute - Poor, Fair, Good

### Table 7: Overall Viability Ratings for Conservation Assets

<table>
<thead>
<tr>
<th>Conservation Asset</th>
<th>Landscape Context</th>
<th>Condition</th>
<th>Size</th>
<th>Overall Viability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Sandy Coasts and Dunes</td>
<td>Fair</td>
<td>Fair</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>2 Rocky Coasts and Cliffs</td>
<td>Good</td>
<td>Fair</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>3 Sheltered Coastal Bays</td>
<td>Good</td>
<td>Good</td>
<td>-</td>
<td>Good</td>
</tr>
<tr>
<td>4 Sub-coastal Wetlands</td>
<td>Poor</td>
<td>Good</td>
<td>Good</td>
<td>Fair</td>
</tr>
<tr>
<td>5 Sub-coastal and Limestone Plains Mallee</td>
<td>Fair</td>
<td>Good</td>
<td>Very Good</td>
<td>Good</td>
</tr>
<tr>
<td>6a Sand Mallee</td>
<td>Fair</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>6b Sand Mallee Dune-top Remnants</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>7 Red Gum Woodlands</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
<td>Fair</td>
</tr>
<tr>
<td>8 Mallee Box and Native Pine Woodlands</td>
<td>Good</td>
<td>Fair</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>9 Sheoak Grassy Woodlands</td>
<td>Fair</td>
<td>Poor</td>
<td>Poor</td>
<td>Poor</td>
</tr>
<tr>
<td>10 Granite Outcrops</td>
<td>Fair</td>
<td>Fair</td>
<td>-</td>
<td>Fair</td>
</tr>
</tbody>
</table>

**Overall Landscape Viability**

Fair
4. Threats to Conservation Assets

4.1. Methodology for Assessing Threats

The third step in the conservation action planning process involves the identification of high priority threats to the conservation assets. This is a two step process.

The first step involves an assessment of the severity of the key stresses to the conservation assets. Stresses are inversely related to the key ecological attributes (refer section 3) and may include altered fire regimes, altered hydrological regimes, altered species diversity, reduced water quality, habitat fragmentation, etc. Stresses are ranked from very high to low based on:

- **severity of damage where it occurs** i.e. what level of damage can reasonably be expected within 10 years under current circumstances (Very High - destroys or eliminates the conservation asset, High - seriously degrades, Medium - moderately degrades, Low - slightly impairs);

- **scope of the damage** i.e. what is the geographic scope of impact on the conservation asset that can be reasonably expected within 10 years under current circumstances (Very High - very widespread, High - widespread, Medium - localised, Low - very localised).

The second step in the process involves the identification and ranking of the source of stresses (i.e. the direct threats). For example, the source of stress for reduced species diversity may be total grazing pressure or the source of stress for altered hydrological regimes may be river extraction. Sources of stress are ranked from very high to low based on:

- **contribution of the source to the stress** i.e. expected contribution of the source, acting alone, to the full expression of the stress under current circumstances (i.e. Very High - very large contributor, High - large contributor, Medium - moderate contributor, Low - small contributor).

- **irreversibility of the stress caused by the source** (Very High - not reversible, High - reversible, but not practically affordable, Medium - reversible with reasonable commitment of resources, Low - easily reversible at low cost).

Once the stresses and sources are ranked according to the above criteria, a summary rating for each threat is generated by the Conservation Action Planning (CAP) software. This results in the threats summary table (refer table 5) that allocates a ranking for each threat from very high to low, both in terms of the threat to the individual conservation assets and to the collective impact of the threat across the landscape.

**Source**: adapted from (Low 2003)

4.2. Threats to the Conservation Assets in the WildEyre Project Area

The key threats to the conservation assets, as assessed by the planning team, are displayed in Table 8. The table shows that current dominant grazing practices (termed ‘incompatible stock grazing’) are considered a high threat to a number of conservation assets, as are grazing pressure from feral herbivores (eg. rabbits) and abundant kangaroos. Other high ranked threats included habitat fragmentation and encroachment of agriculture (i.e. a result of historical vegetation clearance), environmental weeds, unsustainable groundwater extraction, feral carnivores, fire management coastal development and coastal recreational access. **Sheoak Grassy Woodlands** are the most highly threatened conservation asset, followed by Sand Mallee Dune-top Remnants, Red Gum Woodlands and Mallee Box and Native Pine Woodlands.
## 4. Threats to Conservation Assets

### Table 8: Key Threats to Conservation Assets

<table>
<thead>
<tr>
<th>Threats Across Targets</th>
<th>Sandy Coasts and Dunes</th>
<th>Rocky Coasts and Cliffs</th>
<th>Coastal Bays</th>
<th>Sub-coastal wetland</th>
<th>Sub-coastal &amp; Limnetic Lakes</th>
<th>Sand Mallee</th>
<th>Red Gum Woodlands</th>
<th>Mallee Box &amp; Native Pine Woodlands</th>
<th>Shoalak Woodlands</th>
<th>Granite Outcrops</th>
<th>Overall Threat Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incompatible stock grazing</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Very High</td>
<td>Medium</td>
<td>Very High</td>
<td></td>
</tr>
<tr>
<td>Feral herbivores (rabbit grazing)</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abundant native species grazing (kangaroo)</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Altered hydrological regimes</td>
<td>Medium</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Habitat fragmentation (historic loss of vegetation)</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Weeds</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Feral carnivores</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Coastal development</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Unmanaged recreational access and commercial activities (e.g. abalone farmers)</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Fire management / suppression (lack of mosaic, patchy burns)</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Honeybees</td>
<td>Low</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Introduced Starlings</td>
<td>Low</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mining exploration</td>
<td>Low</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overuse of marine resources (fishing, cockles)</td>
<td>Low</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Threat Status

| Medium | Medium | Low | Medium | Medium | Medium | High | High | Very High | Medium | Very High |
5. Setting Conservation Objectives

5.1. Methodology for Setting Conservation Objectives

The fourth step in the conservation action planning process involves setting measurable objectives that, if achieved, would ensure the long term conservation of the assets. In particular, objectives are developed in line with the S.M.A.R.T principles (i.e specific, measurable, attainable, realistic and time-bound) and are aimed at addressing high priority threats or achieving improvements in size, condition and landscape context attributes.

5.2. Conservation Objectives for the WildEyre Project

15 conservation objectives have been developed by the WildEyre planning group to address the medium and high ranked threats to the conservation assets (refer Table 8). Three foundational objectives are also presented in this section. Foundational objectives underpin the development and successful implementation of landscape-scale projects and address funding, community engagement and knowledge gaps.

An analysis of the formal protection status of each conservation asset (i.e. within conservation reserves and private Heritage Agreements) has also been undertaken to help set numerical area targets for conservation objectives (refer Table 9). The analysis is based on the simplified 30-50% vegetation cover principle as outlined in Section 5.1 above.

For reference Appendix 4 contains a landscape linkages map produced during a priority area mapping project for the WildEyre region (Koch 2013). The map gives spatial context to many of the conservation objectives.
5. Setting Conservation Objectives

3 Foundational Objectives

Funding Objective:
From 2010, gain sufficient annual funding for the successful implementation of the WildEyre project.

Organisational Partnerships and Community Support Objective:
By 2012, consolidate organisational partnerships and community support for the WildEyre project.

Knowledge Gaps and Research Objective:
By 2015, secure key ecological knowledge for the successful implementation of the WildEyre project.

16 Conservation Objectives

Coastal Sustainable Recreational Access Objective:
By 2020, at least 10 priority fauna breeding sites (Ospreys, White-bellied Sea Eagles, Hooded Plovers, Pied Oystercatchers) in high value coastal areas have adequate protection (sufficient to enable acceptable level of breeding success) from inappropriate recreation activities.

Coastal Weed Control Objective:
By 2015, eradication of outlying occurrences of high priority coastal weeds (e.g. African Boxthorn) and on-going reduction of core infestations to conserve high value habitat and prevent further spread.

Coastal Sustainable Development Objective:
Ensure coastal development is maintained at low levels and is restricted to environmentally sensitive designs and locations by 2025

Revegetation Buffers and Linkage Objectives:
By 2025, revegetate 12000 hectares of Sheoak Grassy Woodlands on non-regenerative sites to buffer sub-coastal wetlands, establish key landscape linkages and ensure adequate patch size and total area.

By 2025, buffer all granite outcrops greater than 1 hectare through 500 hectares of revegetation to conserve a unique habitat type and landform.

By 2020, reconnect Hincks Conservation Park to Barwell Conservation Park, establishing at least 500ha of sand mallee habitat (with spinifex understorey where possible) for ground-dwelling fauna such as Sandhill Dunnart and Malleefowl.

Sustainable Stock Grazing Objectives:
By 2020, achieve landscape-scale control of total grazing pressure (roos, rabbits and stock) across 3 priority sublandscapes to achieve measurable improvement of BCM scores and regeneration of Sheoak Grassy Woodlands (5000 ha), Red Gum Woodlands (1000 ha) and Mallee Box and Native Pine Woodlands (2000 ha), plus 5 priority West Coast Mintbush sites.

Hydrological Regimes Objective:
Ensure groundwater extraction is maintained at levels required to maintain healthy Red Gum Woodlands (canopy health within natural range of variation) by 2020
**Ecological Fire Regimes Objective:**
By 2017, maintain suitable fire regimes in mallee communities to minimise the risk of large fires destroying threatened species populations, encourage the regeneration of fire dependent plants and provide a mosaic of habitat at different successional stages.

**Feral Carnivore Control Objective:**
By 2020 maintain fox-baiting and cat-control methods at level required to achieve viable (desired distribution and increasing in abundance) of shorebirds, malleefowl and other predation-sensitive fauna at at least five high priority sites.

**Feral Herbivore Control Objective:**
By 2020, control rabbits to the level required to optimise regeneration of West Coast Mintbush and have adequate protection measures in place for all new revegetation sites. Develop effective solutions for minimising the impact of kangaroos on revegetation sites by 2017.

**Formal Protection of Under-represented Ecosystems Objective:**
By 2012, restore & secure long term protection (private land agreements, formal reserves) for an additional 1,300 ha of the high quality Sheoak Grassy Woodlands, 2,000 ha of high quality, threatened species habitats within Red Gum Woodlands, and 10,000 ha of high quality Native Pine & Mallee Box Woodlands to ensure an adequate network of protected areas.

**Table 9: Protected Area Analysis of WildEyre Conservation Assets**

<table>
<thead>
<tr>
<th>Conservation Asset</th>
<th>Total Area (ha)</th>
<th>DENR Reserves (ha)</th>
<th>Heritage Agreement (ha)</th>
<th>DENR &amp; HA (ha)</th>
<th>DENR &amp; HA (%)</th>
<th>30% Target (ha)</th>
<th>Gap (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal Sandy Dunes</td>
<td>21,032</td>
<td>3,964</td>
<td>944</td>
<td>4,909</td>
<td>23</td>
<td>6,310</td>
<td>1,401</td>
</tr>
<tr>
<td>Coastal Cliffs</td>
<td>1264</td>
<td>0</td>
<td>55</td>
<td>55</td>
<td>4</td>
<td>379</td>
<td>324</td>
</tr>
<tr>
<td>Sheltered Bay Vegetation</td>
<td>342</td>
<td>50</td>
<td>0</td>
<td>50</td>
<td>15</td>
<td>103</td>
<td>53</td>
</tr>
<tr>
<td>Sub coastal Wetlands</td>
<td>15,190</td>
<td>2,776</td>
<td>175</td>
<td>2,951</td>
<td>19</td>
<td>4,557</td>
<td>1,606</td>
</tr>
<tr>
<td>Coast and Inland Limestone Mallee</td>
<td>351,868</td>
<td>123,488</td>
<td>72,276</td>
<td>195,764</td>
<td>56</td>
<td>105,560</td>
<td>-90,204</td>
</tr>
<tr>
<td>Sand Mallee Communities</td>
<td>77,838</td>
<td>60,400</td>
<td>6,371</td>
<td>66,771</td>
<td>86</td>
<td>23,351</td>
<td>-43,419</td>
</tr>
<tr>
<td>Red Gum Floodplain Woodlands</td>
<td>4,148</td>
<td>606</td>
<td>239</td>
<td>845</td>
<td>20</td>
<td>2,074*</td>
<td>400</td>
</tr>
<tr>
<td>Mallee Box / Native Pine Woodlands</td>
<td>199,087</td>
<td>34213</td>
<td>17,019</td>
<td>51,232</td>
<td>26</td>
<td>59,726</td>
<td>8,494</td>
</tr>
<tr>
<td>Sheoak Grassy Woodlands</td>
<td>2669</td>
<td>182</td>
<td>7</td>
<td>189</td>
<td>7</td>
<td>1,335*</td>
<td>1,146</td>
</tr>
<tr>
<td>Native Grasslands / Low Sedgelands</td>
<td>57,084</td>
<td>265</td>
<td>1,656</td>
<td>1,921</td>
<td>3</td>
<td>17,125</td>
<td>15,204</td>
</tr>
<tr>
<td>Unallocated</td>
<td>7,297</td>
<td>994</td>
<td>249</td>
<td>1,243</td>
<td>17</td>
<td>2,189</td>
<td>946</td>
</tr>
<tr>
<td>Total</td>
<td>737,819</td>
<td>226,939</td>
<td>98,992</td>
<td>325,930</td>
<td></td>
<td>221,346</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* 50% target used for highly depleted assets
6. Conservation Strategies and Actions

6.1. Methodology for Developing and Prioritising Conservation Strategies

The fifth step in the conservation action planning process involves the identification of effective strategies and action steps to achieve the conservation objectives developed in Section 5. This is a three step process.

**Step 1** Conduct a thorough situation analysis of the key factors related to the conservation objectives. This includes consideration of the causal factors underlying particular threats and potential hurdles for enhancing the condition of conservation assets (e.g. social, cultural, economic and individual motivations). This can help pinpoint opportunities for intervention and guide decisions about which delivery mechanisms are best employed to achieve the conservation objectives (e.g. direct landholder targeting, use of volunteers or contractors, market based instruments, education programs, and legislative or policy changes).

**Step 2** Identify conservation strategies, actions and tasks. Conservation strategies and action steps are the broad courses of action required to achieve the conservation objectives. There are essentially three “pathways” for strategy development that should be considered for threat abatement objectives. These include:

- direct protection or management of land or water;
- influencing a key decision maker;
- addressing a key underlying factor.

Once the major strategies are identified, they may be broken down into smaller, more detailed action steps.

**Step 3** Prioritise conservation strategies and action steps according to a cost-benefit and feasibility analysis. Useful considerations for prioritising strategies and action steps include the relative conservation value of the asset (e.g. nationally threatened habitat type), its level of threat, the contribution of the strategy to meeting the conservation objective, the duration of the benefit achieved and the potential leverage of the action (e.g. high profile site that provides a catalyst for further action). Feasibility of implementation should also be considered including the total cost and time required to implement the strategy, the ease of land access and the degree to which a lead individual or institution exists to implement the strategy. It may be useful to initially prioritise a small number of conservation strategies that provide a mix of high benefit and high feasibility (i.e. low hanging fruit) actions. In particular the high feasibility actions ensures that a project can get some early ‘runs on the board’ to leverage investment into the more complex and costly strategies.

**Use of Conceptual Models**

Conceptual models are increasingly being used for strategy development in conservation planning. A conceptual model is a visual method (diagram) of representing a set of causal relationships between factors that are believed to impact on one or more of the conservation assets. A good model should explicitly link the conservation assets to the direct threats impacting them, the factors (i.e. indirect threats) influencing the direct threats, and the strategic activities proposed to mitigate those factors (WWF 2005).

The Miradi software program ([www.miradi.org](http://www.miradi.org)) can be used to develop conceptual models and fully supports the Conservation Action Planning (CAP) process. The software was developed by the Conservation Measures Partnership (a consortium of international NGO’s) seeking to develop a common language and approach to the design, management and monitoring of conservation programs. It is recommended that projects that have applied the CAP process investigate the use of Miradi and conceptual models during the strategy development process.

6.2. Conservation Strategies and Action Steps for the WildEyre Project

The following section presents the conservation strategies and action steps developed by the planning team to achieve the 3 foundational objectives and 15 conservation objectives identified in Section 5. It also orders the objectives, strategies and actions steps into 7 key program areas which reflect the implementation approach taken by on-ground operational teams. An indication of the progress made toward achieving the objective is also given in this section through the use of the terms **On Track** or **Completed** next to the Action Steps (if applicable).
6. Conservation Strategies and Actions

6.1. FOUNDATIONAL PROGRAM

Objective: From 2010, gain sufficient annual funding for the successful implementation of the WildEyre project.

Strategy: Investment and Fund-raising

Actions:
1. Ongoing submission of funding applications through traditional NRM sources - On Track
2. Development of investment prospectus and individual project briefs - On Track
3. Development of promotional DVD to support investment prospectus
4. Project Launch with DVD and investment prospectus to promote awareness and investment
5. Engagement with corporates and the philanthropic sector to secure investment for projects - On Track
6. Carbon offset viability assessment to determine feasibility of attracting carbon investment - On Track

Objective: By 2012, consolidate organisational partnerships and community support for the WildEyre project.

Strategy: Community Engagement and Organisational Partnerships

Actions:
1. Landholder mapping and targeted landholder contact in priority areas - On Track
2. Community workshops, presentations, site visits and community group development - On Track
3. Development of project name, branding and promotional resources - Completed
4. Development of project website - Completed
5. Newsletters and media to keep community and partner organisations informed - On Track
6. Signage (site, roadside, etc) for high profile sites to promote awareness
7. Partnership agreement (MOU) between lead organisations - Completed
8. Engagement of other key project partners - On Track
9. Engagement with indigenous community leaders and land managers - On Track

Objective: By 2015, secure key ecological knowledge for the successful implementation of the WildEyre project.

Strategy: Knowledge, Research and Monitoring and Evaluation

Actions:
1. Ongoing conservation action planning and prioritisation process (CAP, LAF, INFFER, Marxan) - On Track
2. Collation of historical monitoring data, production state of environment reports and development of a landscape monitoring framework - On Track
3. Resource condition assessments of conservation assets including bushland condition, woodland birds, shorebirds, threatened species populations and threatening processes - On Track
4. Establishment of monitoring sites to evaluate effectiveness of conservation actions (before, after, control sites) - On Track
5. Habitat condition mapping and improved threat (weeds, grazing) mapping across the region - On Track
6. Research population dynamics, distributions and trends for key nested flora and fauna species
7. Climate change impact predictions across all assets and nested assets.
6. Conservation Strategies and Actions

6.2. SUSTAINABLE STOCK GRAZING PROGRAM

Objective: By 2020, achieve landscape-scale control of total grazing pressure (roos, rabbits and stock) across 3 priority sublandscapes to achieve measurable improvement of BCM scores and regeneration of Sheoak Grassy Woodlands (5000 ha), Red Gum Woodlands (1000 ha) and Mallee Box and Native Pine Woodlands (2000 ha), plus 5 priority West Coast Mintbush sites.

Map 9: Priority grazing management areas, including subobjective for priority linkage area in Calpatanna Waterhole area.
<table>
<thead>
<tr>
<th>Actions and Activities</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.0. SUSTAINABLE STOCK GRAZING PROGRAM</strong></td>
<td></td>
</tr>
<tr>
<td><strong>1.1 Landscape planning, mapping and prioritisation for grazing management</strong></td>
<td>On-Track</td>
</tr>
<tr>
<td>Improve mapping of Sheoak grassy woodlands and Red Gum woodlands</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Develop vegetation condition layer and stock grazing threat severity layer and</td>
<td>Completed</td>
</tr>
<tr>
<td>integrate with CAP and BCM monitoring</td>
<td>Completed</td>
</tr>
<tr>
<td>Mapping of priority grazing management sites based on threat severity and</td>
<td>Completed</td>
</tr>
<tr>
<td>conservation significance</td>
<td></td>
</tr>
<tr>
<td>Develop states and transitions model for key vegetation communities linked to</td>
<td>Not Specified</td>
</tr>
<tr>
<td>grazing management (link with BCM monitoring)</td>
<td></td>
</tr>
<tr>
<td>Pull together existing knowledge around best practices for grazing in grassy woodland</td>
<td>On-Track</td>
</tr>
<tr>
<td>**1.2 Engage key stakeholders and obtain funding for implementing sustainable stock</td>
<td>Scheduled</td>
</tr>
<tr>
<td>grazing program</td>
<td></td>
</tr>
<tr>
<td>Develop a grant to run a landholder engagement, training and incentives program</td>
<td>Not Specified</td>
</tr>
<tr>
<td>**1.3 Implement landholder engagement, training and incentives program for sustainable</td>
<td>On-Track (17000 ha</td>
</tr>
<tr>
<td>grazing management</td>
<td>of vegetation protected</td>
</tr>
<tr>
<td></td>
<td>and mapped)</td>
</tr>
<tr>
<td>Consult with land managers to understand attitudes and potential barriers to</td>
<td>On-Track</td>
</tr>
<tr>
<td>changing stock grazing regimes</td>
<td></td>
</tr>
<tr>
<td>Identify and promote regional case studies of best practice grazing management in</td>
<td>On-Track</td>
</tr>
<tr>
<td>grassy woodland systems</td>
<td></td>
</tr>
<tr>
<td>Develop and run practical landholder training courses in sustainable stock grazing in</td>
<td>Not Specified</td>
</tr>
<tr>
<td>grassy ecosystems using demonstration sites</td>
<td></td>
</tr>
<tr>
<td>Provide ongoing specialist extension support for landholders and targeted farming</td>
<td>Not Specified</td>
</tr>
<tr>
<td>system groups in priority areas (e-parf and agricultural bureaus)</td>
<td></td>
</tr>
<tr>
<td>Provide financial incentives and technical support to targeted landholders for new</td>
<td>Not Specified</td>
</tr>
<tr>
<td>fencing, waterpoints etc.</td>
<td></td>
</tr>
<tr>
<td>Engage Native Vegetation Council to approve land management agreements that</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Improve fencing of high conservation value parks</td>
<td>Not Specified</td>
</tr>
<tr>
<td><strong>1.4 Develop and implement long term grassy ecosystems monitoring program that</strong></td>
<td>Not Specified</td>
</tr>
<tr>
<td>Develop monitoring plan linking BCM and Bird monitoring as key performance</td>
<td>Completed</td>
</tr>
<tr>
<td>Develop results chain for grazing management program to identify any additional</td>
<td>Completed</td>
</tr>
<tr>
<td>Update monitoring plan to include additional key performance indicators for grazing</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Implement additional monitoring against identified KPIs once grazing management</td>
<td>Not Specified</td>
</tr>
</tbody>
</table>
6. Conservation Strategies and Actions

6.2 REVEGETATION BUFFERS AND LINKAGES PROGRAM:

**Objective:** By 2025, revegetate 12,000 hectares of Sheoak Grassy Woodlands on non-regenerative sites to buffer sub-coastal wetlands, establish key landscape linkages and ensure adequate patch size and total area.

**Objective:** By 2020, buffer all granite outcrops greater than 1 hectare through 5,000 hectares of revegetation, primarily mallee box and native pine woodlands, to conserve a unique habitat type and landform.

**Objective:** By 2020, reconnect Haimbridge Conservation Park to Barwell Conservation Park, establishing at least 500ha of sand mallee habitat (with spinifex understorey where possible) for ground-dwelling fauna such as Sandhill Dunnart and Malleefowl.

<table>
<thead>
<tr>
<th>Actions and Activities</th>
<th>Progress Summary</th>
<th>Progress Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0. Revegetation buffers and linkages program</td>
<td>On-Track</td>
<td>Approximately 1317 ha revegetated (and recorded in spatial database)</td>
</tr>
<tr>
<td>Landscape planning, mapping and prioritisation for revegetation</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Identify and map priority areas for revegetation buffers and linkage areas</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Map pre-European vegetation types across WildEyre</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Map all rocky areas and other areas with high regenerative capacity and integrate into priority area mapping (linkages mapping)</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Define revegetation objectives against 5 star rating system and link with BCM indicators</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Identify public reserves and other available lands potentially compatible with revegetation/regeneration</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Develop scoping reports for high priority sites</td>
<td>On-Track</td>
<td>Revegetation plan developed by Mick Durant for Lake Newland Conservation Park and Dakalanta through 2008 CofC WildEyre funding.</td>
</tr>
<tr>
<td>Develop one subobjective for each landscape linkage area</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Develop best practice guidelines for revegetation and determine necessary innovations and capacity building initiatives</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Set up excel database with species mix appropriate to each vegetation type, seed requirements (weight) etc.</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Identify priority species (structurally/compositionally important but problematic species) for research &amp; development.</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Develop specific best practice revegetation guidelines document/database for each vegetation</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Task</td>
<td>Status</td>
<td>Notes</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Undertake local seed collection, seedbank management and nursery development to support revegetation</td>
<td>On-Track</td>
<td>100 kg of seed collected for WildEyre seedbank through CFOC funding with a focus on Sheoak Woodlands and coastal ecosystems.</td>
</tr>
<tr>
<td>Investigate the development of a new seed production area for grassy groundcovers</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Investigate WOPR program for Sheoak &amp; Native Pine and Mallee Box woodland restoration (and implement trial if feasible)</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Assess the cost-effectiveness of WOPR and alternative delivery models against the achievement of 3 star and 5 star sites</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Pull together available information on best practice kangaroo control methods and integrate with site management plans</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Undertake carbon analysis of the landscape to identify opportunities for future carbon offset funding</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Implement any additional nursery infrastructure requirements following development of revegetation guidelines</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Implement trial to establish the cost-effectiveness of various kangaroo deterrent options at revegetation sites</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Develop states and transitions model for the revegetation of Sheoak Grassy Woodlands</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Obtain funding for implementing revegetation program</td>
<td>On-Track</td>
<td>Biodiversity Fund (172 ha of sheoak reveg); $300,000 secured for Sand Mallee Dune Top restoration/protection by GA / NRM through CfoC 2009-10 funding round.</td>
</tr>
<tr>
<td>Chain Of Bays and Lake Newland wetland buffers</td>
<td>Minor Issues</td>
<td>Kangaroo grazing is damaging Lake Newland site.</td>
</tr>
<tr>
<td>Undertake full-cost revegetation of buffers on available public land in priority areas and ensure results with site maintenance</td>
<td>Minor Issues</td>
<td>Need to find a way to deter kangaroos at revegetation sites.</td>
</tr>
<tr>
<td>Identify and implement initial pilot high quality &quot;5 star&quot; revegetation project</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Develop site management plans for major revegetation sites and ensure land management</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Identify and engage key landholders to understand their attitudes and potential barriers to</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Ongoing, specialist extension support for landholders in priority areas to develop/implement site-based</td>
<td>Not Specified</td>
<td></td>
</tr>
</tbody>
</table>
WildEyre Conservation Action Planning Summary 2016

<table>
<thead>
<tr>
<th>Task</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision of appropriate financial incentives for private landholders in priority areas to undertake revegetation and encourage regeneration</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Develop site monitoring plans for individual sites and link to landscape scale indicators of success</td>
<td>On-Track</td>
</tr>
<tr>
<td>Develop results chain to identify measures of success</td>
<td>Completed</td>
</tr>
<tr>
<td>Develop monitoring plan for revegetation program</td>
<td>Completed</td>
</tr>
<tr>
<td>Ongoing site monitoring and evaluation. Adjust site management plans and undertake maintenance as required</td>
<td>Not Specified</td>
</tr>
</tbody>
</table>

Map 10: High priority revegetation areas to expand, link and reconnect focal vegetation communities (Koch 2013) with linkage area subobjectives developed during recent workshops for high priority areas (refer to Table 10).

Figure 1 shows the different types of condition “states” encountered on cleared land in linkage areas being targeted for revegetation. State 1 (very rocky areas with remnant understory) tends to occur on rises where extensive limestone rock projects from the soil surface. These areas are often associated with a diverse assortment of native grassland plants, typically dominated by *Gahnia lanigera*. State 1 thus has the most natural regenerative capacity and should provide the best outcome from revegetation for the least cost. State 2 often occurs in the swales between these very rocky areas and is often encountered within target revegetation areas.
Figure 1: Different condition “states” encountered on cleared land and theoretical transition (following revegetation) to a Sheoak Grassy Woodland. It is likely that the different condition states would require different revegetation and management inputs to achieve the same result, with state 1 having the most natural regenerative capacity and state 3 the least.

Map 10: Distribution of the three principal condition states on cleared land (described above) targeted for revegetation (formerly dominated by Sheoak Grassy Woodland).
Table 10 shows the results of a workshop process prioritising among eight landscape linkages in terms of revegetation suitability for sheoak grassy woodland (see Maps 9 and 10) according to the following agreed criteria: Biodiversity Benefits, Feasibility 1 (amount of grazing land vs cropping land), Feasibility 2 (landholder interest), Feasibility 3 (amount and quality of rocky sedgelands in linkage area). The Chain of Bays and Bascombe Well to Kaliparu linkage areas emerged as the highest priority areas for revegetation of sheoak grassy woodland because they scored well both in terms of existing biodiversity values and across feasibility factors.

**Table 10.** Prioritisation of landscape linkage areas for sheoak grassy woodland revegetation (in conjunction with grazing management).

<table>
<thead>
<tr>
<th>Linkage Area</th>
<th>BENEFITS: biodiversity values associated with area (sheoak &amp; grassland remnancy, focal threatened sp., wetlands, granite buffers etc.)</th>
<th>Land use change feasibility (how much cropping land in target area)</th>
<th>Landholder interest level</th>
<th>Site suitability (how much rocky sedgeland area with partial understorey occurs in target area)</th>
<th>OVERALL PRIORITY</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chain of Bays</td>
<td>VH</td>
<td>H-M</td>
<td>H</td>
<td>VH</td>
<td>VH</td>
<td>1</td>
</tr>
<tr>
<td>Kaliparu</td>
<td>M</td>
<td>L</td>
<td>H</td>
<td>L</td>
<td>M</td>
<td>5</td>
</tr>
<tr>
<td>Lake Newland</td>
<td>H-VH</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>3</td>
</tr>
<tr>
<td>Middle Lake</td>
<td>L</td>
<td>H</td>
<td>H</td>
<td>L</td>
<td>M</td>
<td>5</td>
</tr>
<tr>
<td>Lake Hamilton</td>
<td>L</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>3</td>
</tr>
<tr>
<td>Hincks – Bascombe Well</td>
<td>H</td>
<td>M</td>
<td>M</td>
<td>H</td>
<td>M-H</td>
<td>4</td>
</tr>
<tr>
<td>Haimbridge to Barwell</td>
<td>H</td>
<td>L</td>
<td>M</td>
<td>L</td>
<td>M</td>
<td>5</td>
</tr>
<tr>
<td>Bascombe Well to Kaliparu</td>
<td>H</td>
<td>VH</td>
<td>M</td>
<td>VH</td>
<td>H-VH</td>
<td>2</td>
</tr>
</tbody>
</table>
Map 11: Prioritisation of landowners for engagement in revegetation and grazing management associated with Sheoak Grassy Woodlands. Relevant landowners were ranked on a four-point scale from Very high to Low based on property size, strategic importance and favourability of condition states for revegetation (see Map 10).
### 6. Conservation Strategies and Actions

#### 6.4. COASTAL PROGRAM - Coastal Weed Control Objective:

**Objective:** By 2017, eradication of outlying occurrences of high priority coastal weeds (e.g. African Boxthorn) and ongoing reduction of core infestations to conserve high value coastal dunes and prevent further spread.

<table>
<thead>
<tr>
<th>Actions and Activities</th>
<th>Progress Summary</th>
<th>Progress Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0. Protect high value coastal areas from boxthorn and other weed infestations</td>
<td>On-Track</td>
<td>All infested coastal areas of WildEyre have been treated at least once</td>
</tr>
<tr>
<td>Develop targeted weed management strategies and monitoring plans for priority weed species</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Develop boxthorn control strategy and monitoring plan</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Trial helicopter application of grazlan for boxthorn control</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Identify priority sites and develop strategy for the control of other priority weeds (eg. Italian Buckthorn and Bridal Creeper)</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Determine funding sources and obtain funding for the coastal weed control program</td>
<td>On-Track</td>
<td>Coastal Boxthorn control program ongoing through Biodiversity Fund project 2012 - 2017 and Chain of Bays CfoC project and 2009-12 State Comp funding, including working with Indigenous work teams, and work on Walgrave Island CP.</td>
</tr>
<tr>
<td>Implement Boxthorn Management Plan and control emerging weed threats</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Implement African Boxthorn Management Plan (includes 16 management areas)</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Control emerging weed threats (eg. Italian Buckthorn, Bridal Creeper) at priority sites</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Ongoing evaluation of boxthorn density, emerging weed threats and reinfestation levels</td>
<td>On-Track</td>
<td>Ongoing monitoring in accordance with Boxthorn control strategy</td>
</tr>
<tr>
<td>Pre and post control monitoring of boxthorn density in accordance with boxthorn management plan</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Ongoing monitoring for weed reinfestation and follow-up control</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Monitor priority sites (infestation prone areas) for emerging weed threats</td>
<td>On-Track</td>
<td></td>
</tr>
</tbody>
</table>
### 6.4. COASTAL PROGRAM - Coastal Sustainable Development Objective:

**Objective:** Ensure coastal development is maintained at low levels and is restricted to environmentally sensitive designs and locations by 2025

<table>
<thead>
<tr>
<th>Actions and Activities</th>
<th>Progress Summary</th>
<th>Progress Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0. Restrict coastal development in priority areas</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Determine &quot;ecologically sensitive&quot; and &quot;less sensitive&quot; coastal areas</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Map ecologically sensitive areas based on threatened flora and fauna values (WB Sea Eagle, Osprey, shorebirds)</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Work with planning approvals agencies where/as required to restrict coastal development in ecologically sensitive areas</td>
<td>Not Specified</td>
<td></td>
</tr>
</tbody>
</table>
6.4. COASTAL PROGRAM - Coastal Sustainable Recreational Access and Development Objectives

**Objective:** By 2020, at least 10 priority fauna breeding sites (Ospreys, White-bellied Sea Eagles, Hooded Plovers, Pied Oystercatchers) in high value coastal areas have adequate protection (sufficient to enable acceptable level of breeding success) from inappropriate recreation activities.

<table>
<thead>
<tr>
<th>Actions and Activities</th>
<th>Progress Summary</th>
<th>Progress Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0. Manage recreational impacts to sensitive coastal fauna</td>
<td>On-Track</td>
<td>Coastal works in the Streaky Bay to Venus Bay region (CfOc 2010 funding)</td>
</tr>
<tr>
<td>Map priority areas for restricting recreational access based on values for sensitive species and threat severity</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Consult with Jane Cooper to map high value and high impact coastal areas for shorebirds and other fauna</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Consult with WildEyre team and coastscape officers to map priority areas for implementing recreational policy and infrastructure changes</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Develop detailed action plan for restricting recreational access at priority sites</td>
<td>Completed</td>
<td></td>
</tr>
<tr>
<td>Consult with Birdlife Australia staff in Victoria to develop a pilot community shorebird monitoring program on the Eyre Peninsula</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Review access management strategy developed (but not implemented) by District Council of Streaky Bay</td>
<td>Not Specified</td>
<td>Chain of Bays 2010 CfOc funding application successful for coastal works in the Streaky Bay to Venus Bay region</td>
</tr>
<tr>
<td>Determine funding sources and obtain funding for the coastal recreation management program</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Work with coastal land managers to implement infrastructure changes and access restrictions wherever possible</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Engage with local communities at priority sites to establish shorebird monitoring program and increase community support for access restrictions</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Install signs, temporary fencing, barriers etc. at priority sites</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Progressive implementation of coastal access management strategy developed for Streaky Bay DC</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Lobby state government to purchase Point Gibson and establish new conservation park with restricted access</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Establish shorebird monitoring program that evaluates the success of recreation infrastructure and policy changes</td>
<td>On-Track</td>
<td>Partially achieved - Chain of Bays 2010 coastal works in the Streaky Bay to Venus Bay region</td>
</tr>
<tr>
<td>Establish ongoing monitoring of shorebirds (including Hooded Plovers and Pied Oystercatchers) focussed on measuring breeding success</td>
<td>On-Track</td>
<td></td>
</tr>
</tbody>
</table>
**Table 11. Prioritisation of sites for management of recreation access.**

<table>
<thead>
<tr>
<th>Site</th>
<th>Major Biodiversity Values</th>
<th>Biodiversity value of site</th>
<th>Recreational Impacts</th>
<th>Feasibility of achieving an outcome</th>
<th>Actions required (&amp; comments)</th>
<th>Overall Priority</th>
<th>Funding source</th>
<th>Project Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Venus Bay</td>
<td>White-bellied Sea Eagle</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Self-managing (inaccessible)</td>
<td>L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cape Blanche</td>
<td>White-Bellied Sea Eagle</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Access management (stones, fencing etc.)</td>
<td>H</td>
<td>TAG</td>
<td>Liz</td>
</tr>
<tr>
<td>Elliston</td>
<td>White-bellied Sea Eagle</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Self-managing (nesting on Waldgrave Island)</td>
<td>L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cape Radstock</td>
<td>White-bellied Sea Eagle</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Self-managing (inaccessible, private land with no residence and locked gate)</td>
<td>L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pigface Island (tbc)</td>
<td>White-bellied Sea Eagle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Back beach (Corvisart Bay)</td>
<td>Hooded Plover, 1 breeding site, at least two regular breeding pairs south of the boardwalk, 1 site abandoned due to dogs, one</td>
<td>VH</td>
<td>VH (surf beach, heavy use, high human traffic, lots off dogs off leashes) – both breeding sites</td>
<td>L</td>
<td>Check existing signage (promoting dogs on leashes)</td>
<td>H</td>
<td>TBD</td>
<td>Mark</td>
</tr>
<tr>
<td>Hallys Beach (Corvisart Bay)</td>
<td>Hooded Plover, 2 breeding pairs and 2 significant breeding sites</td>
<td>VH</td>
<td>H (pedestrians, dogs; dogs off leashes persist despite signage – largest threat)</td>
<td>L</td>
<td>Existing signage (promoting dogs on leashes). Remove quad bike access point or put new signage at access point and pedestrian dog walking tracks to prevent it becoming a new established track</td>
<td>H</td>
<td>TBD</td>
<td>Mark</td>
</tr>
<tr>
<td>Back beach south to High Cliff - includes tractor Beach (Corvisart Bay)</td>
<td>Hooded Plover, 3 breeding pairs closer to Back Beach, 1 breeding pair used to be at Tractor Beach, now gone</td>
<td>VH</td>
<td>M (less pedestrian traffic, backed by private property, dog walkers)</td>
<td>L</td>
<td>No action required, relatively safe area</td>
<td>L</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fishermans Paradise</td>
<td>Hooded Plover, at least 2 breeding pairs, also breeding pied oystercatchers in dune blowout (in off road vehicle traffic area; camping site and houses)</td>
<td>VH</td>
<td>H (sporadic impacts: pedestrians, dogs, foxes and feral cats noted – doesn’t seem to be major issue, increasing pressures from vehicles on beach but still relatively minor)</td>
<td>H</td>
<td>Needs signage (promoting HP &amp; dogs on leashes)</td>
<td>H</td>
<td>TAG</td>
<td></td>
</tr>
<tr>
<td>Seale Bay – (Yanerbie to Seale Bay township)</td>
<td>Hooded Plover, used to be a number of feeding sites at Yanerbie, probably 2 breeding pairs between Yanerbie Reef and Seale Bay town, plus at least 6 pairs of breeding Pied Oystercatchers</td>
<td>VH</td>
<td>H</td>
<td>L</td>
<td>Needs signage (promoting HP &amp; dogs on leashes); consider temporary fencing and signage. There is potential to get community support for the project (definitely Seale bay and possibly Yanerbie)</td>
<td>H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seagull Lake CP</td>
<td>Hooded Plover, shelter, feeding &amp; roosting site in the breeding season; often recorded in May; Coxiella striata small food source for Hooded Plover; also critical habitat for Bead Samphire, Fairy Tern breeding colonies, Banded Stilt, migratory shorebirds, numerous, EPBC-listing for coastal samphire shrublands, karstic system</td>
<td>H</td>
<td>L</td>
<td>L</td>
<td>Needs signage (promoting shorebirds &amp; dogs on leashes); Fox baiting – needs to be year-round to keep numbers (and include working with neighbour) – currently being ramped up and on track</td>
<td>H (fox baiting program underway and at sufficient scale; water extraction from well sites adjacent to Seagull lake for road-making (now complete); impacts on spring water levels – particular issue for breeding Fairy Terns; ongoing issue with water for mining)</td>
<td>H (funding program partially completed)</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Species/Description</td>
<td>Access/travel</td>
<td>Action required</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>--------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Searcy Bay</td>
<td>Hooded Plover (1 breeding pair, near Osprey nest since abandoned), 500-600 Sanderling periodically</td>
<td>M L L</td>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baird Bay</td>
<td>Hooded Plover (Not a known breeding habitat)</td>
<td>L L L</td>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tyinga Beach</td>
<td>Hooded Plover – 2 regular breeding pairs</td>
<td>H L L</td>
<td>H REG Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venus Bay; Entrance beach</td>
<td>Hooded Plover, 1 breeding pair, Pied and Sooty Oystercatchers, 900 Sanderling, 500 Fairy Terns (likely breeding in lakes system)</td>
<td>M (regular nesting pair) L</td>
<td>H TAG Liz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mt Camel beach</td>
<td>Hooded Plover – 1 breeding pair</td>
<td>M L (fairly inaccessible, one building) M</td>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Newland beach north</td>
<td>Hooded Plover</td>
<td>VH H</td>
<td>H REG Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Newland beach sth</td>
<td>Hooded Ploverbreeding, Pied Oystercatchers breeding, up to 900 Sanderling, up to 30 Fairy Terns (likely breeding in lakes system)</td>
<td>VH H (vehicles and dogs); Talia to Walkers Rock – used to be 12 breeding pairs, now 12 bird total (6 breeding pairs max)</td>
<td>M Difficult to stop vehicles; fox baiting (existing program – Mark Anderson to follow up and check that it is happening); existing signs discussing pied oystercatchers and hooded plovers; Fox baiting needs to be well before August to protect pied oystercatchers and Hooded Plovers</td>
<td>H REG Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Newland lakes</td>
<td>Hooded Plover (feeding, roosting habitat for fledged Juveniles, 6 resident pairs); very high biodiversity values in terms of invertebrates, Fairy Terns (feeding on hardyhead in southern lakes), 1000’s of Banded Stilt; lakes seem to act as a drought refuge for waterfowl in moulting season: Australian Shelduck (1300), Cape Barren Goose (100’s), mixed Teal (1000’s), Migratory waders</td>
<td>VH VL (very low access) H</td>
<td>Fox baiting (existing program – Mark Anderson to follow up and check) Needs investigation into whether Hooded plovers breed on saline lake systems on EP; often seen at springs – possible preference for brackish water</td>
<td>H REG Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Newland CR</td>
<td>Hooded Plover, 2 breeding pairs</td>
<td>H M?</td>
<td>H REG</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elliston town – anxious bay</td>
<td>Hooded Plover, possibly breeding pair – likely breeding on lake and then move across to beach</td>
<td>L M H (dogs off leashes, council generally supports dogs offleashes) L-M</td>
<td>Signage required</td>
<td>H REG Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sheringa Beach &amp; Sheringa lagoon</td>
<td>Hooded Plover – 1 breeding pair, Sheringa Lagoon – breeding Blue-billed Duck, breeding Great crested Grebe, breeding Musk Duck, Fairy Terns – feeding, Australian Shelduck (100’s)</td>
<td>H H M (difficult to restrict access)</td>
<td>Review signage – make stronger and more targeted fencing</td>
<td>M TAG Liz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Point Gibson</td>
<td>Migratory shorebirds (&gt;2000 shorebirds; 23 species, 18-19 of which are migratory), nesting Pied Oystercatchers (more than 102 – part of internationally significant site for pied oystercatchers)</td>
<td>VH H H</td>
<td>Vehicle access management and signage required. Repair the fence to restrict access to northern beach (at the bushes or east of the bushes) and install signage Access should be restricted to the greatest extent possible. Lobby government to consider purchase of private land</td>
<td>H TBD Mark</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Map 13: Priority Areas for Managing Coastal Recreational Impacts (revised May 2015)

- Determine location of White-bellied Sea Eagle nest site on Pigface Island and restrict access as required
- Install sign and restrict vehicle access at Point Gibson
- Remove quad bike access point or put new signage at access point
- Install new signage at access point and block pedestrian dog walking tracks
- Check/reinforce existing signage at Back Beach entrance
- Install signage at beach near Fishermans Paradise
- Install sign and possibly temporary fencing; engage Scenic Bay and Yeneroo communities to support project
- Restrict access to White-bellied Sea Eagle nesting site at Cape Blanco
- Fox management required at Tyrrings Beach
- Restrict access to a section of Entrance Beach
- Continue fox baiting program at Lake Newland
- Install signage at Lake Newland CR
- Review signage and fencing at Sheringa Beach and Sheringa Lagoon
6. Conservation Strategies and Actions

Map 14a: Priority Areas for Managing Coastal Development Impacts (Koch 2012)

Map 14b: Priority Areas for Managing Coastal Development Impacts (Koch 2012)
6. Conservation Strategies and Actions

6.7 HYDROLOGICAL REGIMES PROGRAM

**Objective:** Ensure groundwater extraction is maintained at levels required to maintain healthy Red Gum Woodlands (canopy health within natural range of variation) by 2020

<table>
<thead>
<tr>
<th>Actions and Activities</th>
<th>Progress Summary</th>
<th>Progress Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1. Support implementation of the Water Allocation Plan for the Polda Basin (sustainable groundwater use program) to conserve Red Gum Woodlands and Sub-coastal Wetlands</td>
<td>On-Track</td>
<td>Achieved</td>
</tr>
<tr>
<td>Review Water Allocation Plan for the Polda Basin and identify any emerging threats related to groundwater extraction</td>
<td>On-Track</td>
<td></td>
</tr>
<tr>
<td>Lobby for Red Gum requirements to be considered in Water Allocation Plan for the Polda Basin</td>
<td>Completed</td>
<td>Achieved</td>
</tr>
<tr>
<td>Ongoing monitoring of Red Gum health and recruitment</td>
<td>Not Specified</td>
<td></td>
</tr>
<tr>
<td>Monitor the health of Red Gum trees at existing BCM sites using established methodology (ongoing)</td>
<td>Not Specified</td>
<td></td>
</tr>
</tbody>
</table>
6.8 ECOLOGICAL FIRE REGIMES PROGRAM

Objective: By 2017, maintain suitable fire regimes in mallee communities to minimize the risk of large fires destroying threatened species populations, encourage the regeneration of fire dependent plants and provide a mosaic of habitat at different successional stages.

**Actions and Activities**

<table>
<thead>
<tr>
<th>Actions</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.0. Determine and implement appropriate fire regimes</td>
<td>Completed</td>
</tr>
<tr>
<td>Determine the suitability of current fire regimes in comparison to ecological requirements and develop a workable fire management plan for the region</td>
<td>Completed</td>
</tr>
<tr>
<td>Meet with Joe to understand current fire management practices, key knowledge gaps etc.</td>
<td>Completed</td>
</tr>
<tr>
<td>Develop list of potentially &quot;at-risk&quot; flora and fauna species that may require more or less</td>
<td>Completed</td>
</tr>
<tr>
<td>Interrogate existing fire management strategies and data sources for WildEyre region to</td>
<td>Completed</td>
</tr>
<tr>
<td>Subset list to identify potentially at-risk species</td>
<td>Completed</td>
</tr>
<tr>
<td>Supplement database information with information from literature review, listing recommendations for management of individual species</td>
<td>Completed</td>
</tr>
<tr>
<td>Identify &quot;special protection zones&quot; by overlaying maps of fire sensitive species and habitats and provide to fire management personnel</td>
<td>On-Track</td>
</tr>
<tr>
<td>Provide input into prescribed burn plans as required</td>
<td>On-Track</td>
</tr>
</tbody>
</table>
Knowledge Review for Fire Management in Sand Mallee Communities: Key Findings

Aims:

- Review existing knowledge and shortlist species with particular fire management requirements for the WildEyre region
- Determine any important knowledge gaps with respect to fire ecology in the WildEyre region
- Determine the current Fire Age Class Distribution for different CAP Assets

Methods:

- Reviewed DELWP Central EP Fire Management Plan and summarised findings for WildEyre
- Reviewed relevant scientific literature
- Reviewed action statements for threatened flora and fauna
- Mapped current age class distribution and fire frequency across WildEyre region
- Checked threatened flora database for relevant fire sensitive species

Results:

- Management practices that promote some mid-age (11 to 35 years post-fire) and large areas of older vegetation (older than 35 years) are likely to benefit the greatest number of species in semi-arid mallee ecosystems
- Important structural attributes (such as hollows) continue to develop for at least 100 years after fire, so a long-term view of fire management is required.
- “Indeed, protection of older vegetation may be essential if future climate changes result in increased fire frequency in mallee shrublands…” Taylor et al. (2012)

![Figure 1](image-url)  
Figure 1. Predicted post-fire changes in several key structural attributes of mallee vegetation across a 105-year time period (Kelly et al. 2012).
**Map 15:** Fire age class distribution for native vegetation of the WildEyre region.

**Figure 2.** Age class distribution for relevant assets (vegetation groupings) of the WildEyre region.
Map 16: Fire age class distribution in relation to 2017 planned burn for Hincks Wildlife Area.

Map 17: Fire age class distribution in relation to Sand Mallee communities with spinifex understorey.
Table 12. Fire-sensitive threatened flora species of the WildEyre region, adapted from DEWNR Central Eyre Peninsula Management Plan.

<table>
<thead>
<tr>
<th>Species</th>
<th>Common Name</th>
<th>EPBC Status</th>
<th>NPW Status</th>
<th>Wildeyre sites</th>
<th>Dependence on fire for germination</th>
<th>Fire management prescription</th>
<th>Regeneration strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acacia enterocarpa</td>
<td>Jumping-jack Wattle</td>
<td>E</td>
<td>E</td>
<td>Hincks</td>
<td>Unknown</td>
<td>Medium fire frequency</td>
<td>Seeding and resprouting?</td>
</tr>
<tr>
<td>Acacia rhetinocarpa</td>
<td>Resin Wattle</td>
<td>V</td>
<td>V</td>
<td>Haimbridge</td>
<td>Likely</td>
<td>Medium fire frequency</td>
<td>Seeding and resprouting?</td>
</tr>
<tr>
<td>Caladenia dilatata</td>
<td>Late Spider-orchid</td>
<td>E</td>
<td>Bascombe Well</td>
<td>Unlikely</td>
<td>Unknown</td>
<td>More resprouting</td>
<td></td>
</tr>
<tr>
<td>Caladenia tensa</td>
<td>Inland Greencomb Spider-orchid</td>
<td>E</td>
<td>Hincks</td>
<td>Known</td>
<td>Unknown</td>
<td>More seeding</td>
<td></td>
</tr>
<tr>
<td>Swainsona pyrophila</td>
<td>Yellow Swainson-pea</td>
<td>V</td>
<td>R</td>
<td>Haimbridge</td>
<td>Likely</td>
<td>Medium fire frequency</td>
<td></td>
</tr>
<tr>
<td>Prasophyllum calcicola</td>
<td>Limestone Leek-orchid</td>
<td>V</td>
<td>Bascombe Well</td>
<td>Likely</td>
<td>Medium (&gt; 20 years)</td>
<td>Seeding</td>
<td></td>
</tr>
</tbody>
</table>
Table 13. Optimal fire regimes for threatened and sensitive fauna species. Key references include Taylor et al. (2012), Kelly et al. (2012), DEWNR (2013) and Moseby et al. (2016).

<table>
<thead>
<tr>
<th>Species or grouping</th>
<th>EPBC</th>
<th>NPW</th>
<th>Optimal Time since fire</th>
<th>Habitat notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malleefowl</td>
<td>VU</td>
<td>V</td>
<td>&gt;35 years old</td>
<td>Apparent preference for shallow-sands habitats</td>
</tr>
<tr>
<td>Sandhill Dunnart</td>
<td></td>
<td></td>
<td></td>
<td>Preference for mallee habitats with spinifex</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Greater Long-eared Bat</td>
<td>ssp</td>
<td>ssp</td>
<td>&gt;40 years</td>
<td></td>
</tr>
<tr>
<td>Dwarf Four-toed Slider</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bardick</td>
<td>R</td>
<td></td>
<td></td>
<td>Preference for mallee habitats with spinifex</td>
</tr>
<tr>
<td>Yellow-throated Miner</td>
<td>ssp</td>
<td>ssp</td>
<td>likely preference for older vegetation</td>
<td></td>
</tr>
<tr>
<td>Chestnut Quail-thrush</td>
<td>ssp</td>
<td></td>
<td>2-15 years (occupies a range of fire age classes but occurs at highest densities in recently burnt)</td>
<td>Ground foraging insectivores and seeds, sedentary, range of mallee habitats but often spinifex</td>
</tr>
<tr>
<td>Purple-gaped Honeyeater</td>
<td>ssp</td>
<td></td>
<td>likely preference for older vegetation</td>
<td></td>
</tr>
<tr>
<td>Gilbert’s Whistler</td>
<td>R</td>
<td></td>
<td></td>
<td>Preference for mallee habitats with spinifex</td>
</tr>
<tr>
<td>Grey Currawong</td>
<td>ssp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shy Heathwren</td>
<td>R</td>
<td></td>
<td>Likes well developed shrub layer &gt;35 years since fire</td>
<td></td>
</tr>
<tr>
<td>Birds - general</td>
<td></td>
<td></td>
<td>older is better (more hollows and habitat diversity)</td>
<td></td>
</tr>
<tr>
<td>Mammals - general</td>
<td></td>
<td></td>
<td>some species prefer older vegetation but many show no relationship with age since fire</td>
<td></td>
</tr>
<tr>
<td>Reptiles - general</td>
<td></td>
<td></td>
<td>some species prefer older vegetation but many show no relationship with age since fire</td>
<td></td>
</tr>
</tbody>
</table>

Sandhill Dunnart (Moseby et al. 2016)
- Best predictor of Sandhill Dunnart presence was spinifex cover (cover >25%; good for survival)
- Best predictor of Sandhill Dunnart abundance was spinifex height (height>400mm; good for breeding)
- Spinifex cover peaks at 20-30 years post-fire and starts to decline but spinifex height stays relatively constant
- So Sandhill Dunnart presence more constrained by minimum (>8 years since fire) than maximum (older mallee still provides suitable habitat)
- So habitat suitability should be assessed on the basis of habitat characteristics rather than age-since-fire in isolation
- Avoid burning mid-aged habitat where possible (11-35 years)
- SD may be present in long unburnt areas on private land. These may act as refuges from wildfire.
- Providing dispersal pathways (corridors) as per linkages plan might be important to enable recolonization after fire.
### 6.11 FORMAL PROTECTION OF UNDER-REPRESENTED ECOSYSTEMS (30% MINIMUM TARGET)

**Objective:** By 2025, long term, formal protection (private land agreements, formal reserves) of 1,300 hectares of Sheoak Grassy Woodlands, 6,500 hectares of coastal dunes and cliffs, 4,500 hectares of sub-coastal wetlands, 2,000 hectares of Red Gum Woodlands and 60,000 hectares of mallee box and native pine woodlands, with priority to high quality, representative areas that support threatened species habitat and key landscape linkages.

<table>
<thead>
<tr>
<th>Actions and Activities</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0. Targeted long term protection program for high value habitats</td>
<td>Not Specified</td>
</tr>
<tr>
<td>7.1 Map priority areas and identify target landholders</td>
<td>On-Track</td>
</tr>
<tr>
<td>- Initial mapping of high priority areas based on value for threatened species and depleted communities and vegetation condition</td>
<td>Completed</td>
</tr>
<tr>
<td>- Identify target landholders associated with high value land parcels</td>
<td>Not Specified</td>
</tr>
<tr>
<td>- Refine priority areas following improved (grundtruthed) vegetation and condition mapping</td>
<td>Not Specified</td>
</tr>
<tr>
<td>- Refine priority areas based on improved understanding of threatened species distributions</td>
<td>Not Specified</td>
</tr>
<tr>
<td>- Refine objectives based on pre-European and linkage plan mapping</td>
<td>Not Specified</td>
</tr>
<tr>
<td>7.2 Obtain funding for implementing targeted formal protection program</td>
<td>Not Specified</td>
</tr>
<tr>
<td>- Apply for grant to continue funding for the project</td>
<td>Not Specified</td>
</tr>
<tr>
<td>7.3 Implement targeted formal protection program</td>
<td>Not Specified</td>
</tr>
<tr>
<td>- Run initial project development workshops with community representatives to understand and overcome barriers to implementation</td>
<td>Not Specified</td>
</tr>
<tr>
<td>- Discuss with key land managers of priority sites long term private land protection options (formal reserve acquisition, heritage agreements, stewardship payments, private sanctuaries, etc)</td>
<td>Not Specified</td>
</tr>
<tr>
<td>- Lobby DEWNR and NGOs (AWC, Nature Foundation, etc) to purchase properties if made available</td>
<td>Not Specified</td>
</tr>
<tr>
<td>- Implement stewardship payment program for private landholders to put high value areas under long term protection</td>
<td>On-Track</td>
</tr>
<tr>
<td>7.4 Monitor improvements in vegetation condition and link to bird monitoring</td>
<td>Not Specified</td>
</tr>
</tbody>
</table>
Map 15: Long Term Protection Priority Areas (Koch 2013)
### 6. Conservation Strategies and Actions

#### 6.9 FERAL CARNIVORE CONTROL PROGRAM

**Objective:** By 2020 maintain fox-baiting and cat-control methods at level required to achieve viable (desired distribution and increasing in abundance) of shorebirds, malleefowl and other predation-sensitive fauna at at least five high priority sites

<table>
<thead>
<tr>
<th>Actions and Activities</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.0. Cross-tenure feral predator baiting and control program</td>
<td>Not Specified</td>
</tr>
<tr>
<td>8.1 Identify priority areas for fox and cat control and develop long term, landscape scale control strategy</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Identify fauna species most threatened by foxes and cats</td>
<td>Completed</td>
</tr>
<tr>
<td>Review the status of WildEyre malleefowl population and the relative importance of primary threats in conjunction with national Malleefowl</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Determine the relative importance of foxes and cats in the region on threatened fauna species</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Review best practices for fox and cat control and develop costed landscape-scale control strategy</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Map priority areas for fox and cat control based on the distribution of predation-sensitive fauna</td>
<td>Not Specified</td>
</tr>
<tr>
<td>8.2 Obtain funding for implementing the feral predator control strategy</td>
<td>On-Track</td>
</tr>
<tr>
<td>8.3 Implement cross-tenure feral predator control in priority areas</td>
<td>On-Track (TAG): 2000 ha of fox and cat control completed</td>
</tr>
<tr>
<td>Implement Targeted Area Grants project in the Chain of Bays area</td>
<td>On-Track</td>
</tr>
<tr>
<td>Trial innovative new cat control technologies.</td>
<td>Completed</td>
</tr>
<tr>
<td>8.4 Establish monitoring program for predation-sensitive fauna to evaluate the impact of control efforts</td>
<td>Not Specified</td>
</tr>
</tbody>
</table>
6.10 FERAL AND ABUNDANT NATIVE HERBIVORE CONTROL PROGRAM

Objective: By 2020, control rabbits to the level required to optimise regeneration of West Coast Mintbush and have adequate protection measures in place for all new revegetation sites.

**Actions and Activities**

<table>
<thead>
<tr>
<th>9.0. Feral herbivore and native herbivore control program</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1 Identify priority areas for rabbit and kangaroo control and develop long term, cross-tenure control strategy</td>
</tr>
<tr>
<td>Analyse existing data from kangaroo surveys</td>
</tr>
<tr>
<td>Rapid assessment survey or research project to determine the relative importance of roads, proximity to vegetation and watering points as driver of kangaroo abundance and browsing pressure</td>
</tr>
<tr>
<td>Identify priority areas for rabbit control based on understanding of high impact areas, key fauna and flora habitats etc.</td>
</tr>
<tr>
<td>Conduct aerial surveys to determine the severity of emerging feral herbivore threats such as deer</td>
</tr>
<tr>
<td>9.2 Determine whether additional funding is required for successful implementation and seek funding as required</td>
</tr>
<tr>
<td>9.3 Implement cross-tenure control program in priority areas</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>Document total grazing pressure impacts of kangaroos on agriculture and promote to the wider community</td>
</tr>
<tr>
<td>Revegetate Cape Radstock (an area that acts like an island where kangaroos can be kept in very low numbers)</td>
</tr>
<tr>
<td>Highly targeted rabbit and integrated pest management program focussing on high priority sites eg. West Coast Mintbush in Chain of Bays area.</td>
</tr>
<tr>
<td>Contact Biosecurity SA and determine whether there is a way that we can facilitate the spread of a new strain of calicivirus (RH5)</td>
</tr>
<tr>
<td>9.4 Ongoing monitoring and evaluation of the success of herbivore control efforts based on vegetation and soil condition</td>
</tr>
</tbody>
</table>
7. Monitoring and Evaluation

7.1. Methodology for Developing a Monitoring Program

The final step in the conservation action planning process is an ongoing one which involves the development and implementation of a rigorous monitoring, evaluation and adaptive management program. This serves a number of important functions including:

- determining whether the strategies and actions are achieving the conservation objectives and identifying areas for improvement;
- showing trends in the condition of conservation assets and the levels of threat;
- demonstrating the effectiveness and efficiency of investment into the conservation program;
- linking local conservation outcomes with other programs to describe the local-global biodiversity outlook.

In particular two types of monitoring and evaluation are identified in the conservation action planning framework: 1) strategy effectiveness, and 2) resource condition (i.e. asset condition and / or level of threat).

Appropriate Level of Resourcing for Monitoring and Evaluation

Many researchers and conservation practitioners agree that a monitoring effort of 10-20% of the total program budget is an appropriate level of resourcing. However the level of resources allocated to monitoring should vary in proportion to the level of uncertainty surrounding an assumption that action A will lead to the conservation goal B. Higher levels of uncertainty may necessitate greater monitoring effort (i.e. replicated experiments and trials) to test a particular conservation theory.

Use of Results chains

Results chains are a relatively recent tool to assist conservation planners test assumptions that an action will achieve a desired objective. Results chains are broadly based on principles of logical framework analysis and are supported by Miradi software (www.miradi.org). By identifying interim results or milestones along a trajectory towards the delivery of an outcome, results chains make implicit assumptions about the expected results of activities explicit. This process typically results in more rigorous strategy development by the project team. Once a sequence of outputs and outcomes are represented as a results chain diagram, it is relatively easy to visualise and identify monitoring indicators and milestones along the way to a conservation goal.

7.2. Monitoring Indicators for the WildEyre Project

An effective monitoring program for the WildEyre project should achieve two major outcomes:

1) RESOURCE CONDITION MONITORING
   - provide quantitative data to confirm or revise the current status of the key ecological attributes and overall viability of the conservation assets & / or the current status of the key threats;
   - establish baseline data to monitor future changes in the status of the key ecological attributes and overall viability of the conservation assets &/ or status of the key threats;
2) STRATEGY EFFECTIVENESS MONITORING
   - provide quantitative data to assess the effectiveness of the conservation strategies and action steps and identify areas for refinement.

Monitoring indicators should be closely associated to the status of the key ecological attributes and address landscape context, condition and size attributes of the conservation assets (refer Table 10). A monitoring program should also make use of any existing monitoring data so as to ensure resources are used efficiently. This may involve creating links with other organisations that may have complimentary aims or legislative requirements to undertake environmental monitoring.
### Table 10: Recommended Monitoring Indicators for Key Ecological Attributes (KEA) of Conservation Assets

<table>
<thead>
<tr>
<th>Conservation Asset</th>
<th>Fire Regime</th>
<th>Connectivity to adjacent communities</th>
<th>Dune formation processes</th>
<th>Hydrological Regime</th>
<th>Water Quality</th>
<th>Flora Species Diversity</th>
<th>Fauna Species Diversity</th>
<th>Soil Condition</th>
<th>Total area and patch size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandy Coasts and Dunes</td>
<td>-</td>
<td>Percentage of coastal zone buffered by terrestrial vegetation communities</td>
<td>Presence of primary and secondary dunes, Presence of barriers to natural processes</td>
<td>-</td>
<td>-</td>
<td>Flora Species composition (BCM) sites, Presence of weeds</td>
<td>Habitat-sensitive fauna species numbers (shorebirds)</td>
<td>-</td>
<td>Percentage of pre-European cover and total size &amp; number of separate patches</td>
</tr>
<tr>
<td>Rocky Coasts and Cliff-tops</td>
<td>-</td>
<td>Degree of habitat fragmentation and connectivity with other large patches</td>
<td></td>
<td>-</td>
<td>-</td>
<td>Flora Species composition (BCM) sites, Presence of weeds</td>
<td>Habitat-sensitive fauna species numbers, Presence of feral carnivores</td>
<td>-</td>
<td>Percentage of pre-European cover and total size &amp; number of separate patches</td>
</tr>
<tr>
<td>Sheltered Bays</td>
<td>-</td>
<td>Percentage of coastal zone buffered by terrestrial vegetation communities</td>
<td></td>
<td>Extent of tidal inundation, Number of barriers to tidal flows</td>
<td>Level of turbidity, pollutants &amp; water temperature</td>
<td>Flora Species composition (BCM) sites, Presence of weeds</td>
<td>Habitat-sensitive fauna species numbers (shorebirds, shellfish and aquatic invertebrates)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sub-coastal Wetlands</td>
<td>-</td>
<td>Percentage of riparian zone and waterholes buffered by terrestrial vegetation communities</td>
<td></td>
<td>Timing, frequency, duration and extent of flooding</td>
<td>Level of turbidity, pollutants &amp; quality of rivers, waterholes and groundwater</td>
<td>Tree crown health, Flora Species composition (BCM) sites, Presence of weeds</td>
<td>Habitat-sensitive fauna species numbers</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mallee Communities</td>
<td>Timing, frequency intensity &amp; extent of fire events (fire age mapping)</td>
<td>Degree of habitat fragmentation and connectivity with other large patches</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Flora Species composition (BCM) sites, Presence of weeds</td>
<td>Habitat-sensitive fauna species numbers, Presence of feral carnivores</td>
<td>-</td>
<td>Percentage of pre-European cover and total size &amp; number of separate patches</td>
</tr>
<tr>
<td>Native Pines, Mallee Box and Sheoak Woodlands</td>
<td>Timing, frequency intensity &amp; extent of fire events (fire age mapping)</td>
<td>Degree of habitat fragmentation and connectivity with other large patches</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Flora Species composition (BCM) sites, Presence of weeds and feral herbivores</td>
<td>Habitat-sensitive fauna species numbers (declining woodland birds)</td>
<td>Presence or absence of cryptogams, lichens and inter-tussock spaces</td>
<td>Percentage of pre-European cover and total size &amp; number of separate patches</td>
</tr>
<tr>
<td>Native Grasslands and Sedgelands</td>
<td>Timing, frequency intensity &amp; extent of fire events (fire age mapping)</td>
<td>Degree of habitat fragmentation and connectivity with other large patches</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Flora Species composition (BCM) sites, Presence of weeds and feral herbivores</td>
<td>Habitat-sensitive fauna species numbers (declining birds)</td>
<td>Presence or absence of cryptogams, lichens and inter-tussock spaces</td>
<td>Percentage of pre-European cover and total size &amp; number of separate patches</td>
</tr>
<tr>
<td>Granite Inselbergs</td>
<td>-</td>
<td>Degree of habitat fragmentation and connectivity with other large patches</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Flora Species composition (BCM) sites, Presence of weeds</td>
<td>Habitat-sensitive fauna species numbers</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
# Appendix 1: Plant Species of Conservation Significance in the WildEyre Project Area (DEWR spatial database)

<table>
<thead>
<tr>
<th>Species Name</th>
<th>Common Name</th>
<th>Conservation Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Acacia alcockii</em></td>
<td>Alcock’s Wattle</td>
<td>R</td>
</tr>
<tr>
<td><em>Acacia enterocarpa</em></td>
<td>Jumping-jack Wattle</td>
<td>EN</td>
</tr>
<tr>
<td><em>Acacia hexaneura</em></td>
<td>Six-nerve Spine-bush</td>
<td>R</td>
</tr>
<tr>
<td><em>Acacia iteophylla</em></td>
<td>Flinders Ranges Wattle</td>
<td>R</td>
</tr>
<tr>
<td><em>Acacia rhetinocarpa</em></td>
<td>Resin Wattle</td>
<td>VU</td>
</tr>
<tr>
<td><em>Acacia rhigiophylla</em></td>
<td>Dagger-leaf Wattle</td>
<td>R</td>
</tr>
<tr>
<td><em>Amphibromus macrorhinus</em></td>
<td>Long-nosed Swamp Wallaby-grass</td>
<td>R</td>
</tr>
<tr>
<td><em>Anogramma leptophylla</em></td>
<td>Annual Fern</td>
<td>R</td>
</tr>
<tr>
<td><em>Asplenium trichomanes</em></td>
<td>Common Spleenwort</td>
<td>R</td>
</tr>
<tr>
<td><em>Austrodanthonia laevis</em></td>
<td>Smooth Wallaby-grass</td>
<td>R</td>
</tr>
<tr>
<td><em>Austrostipa echinata</em></td>
<td>Spiny Spear-grass</td>
<td>R</td>
</tr>
<tr>
<td><em>Austrostipa multispiculis</em></td>
<td></td>
<td>R</td>
</tr>
<tr>
<td><em>Austrostipa pilata</em></td>
<td>Prickly Spear-grass</td>
<td>V</td>
</tr>
<tr>
<td><em>Austrostipa plumigera</em></td>
<td></td>
<td>R</td>
</tr>
<tr>
<td><em>Austrostipa tenuifolia</em></td>
<td></td>
<td>R</td>
</tr>
<tr>
<td><em>Austrostipa vickeryana</em></td>
<td>Vickery's Spear-grass</td>
<td>R</td>
</tr>
<tr>
<td><em>Bossiaea ensata</em></td>
<td>Sword Bossiaea</td>
<td>V</td>
</tr>
<tr>
<td><em>Brachyscome xanthocarpa</em></td>
<td>Yellow-fruit Daisy</td>
<td>R</td>
</tr>
<tr>
<td><em>Caladenia bicaliata ssp. Bicaliata</em></td>
<td>Western Daddy-long-legs</td>
<td>R</td>
</tr>
<tr>
<td><em>Caladenia brumalis</em></td>
<td>Winter Spider-orchid</td>
<td>VU</td>
</tr>
<tr>
<td><em>Caladenia sp. Southeast (R.Bates 66283)</em></td>
<td>Sand Spider-orchid</td>
<td>EN</td>
</tr>
<tr>
<td><em>Caladenia tensa</em></td>
<td>Inland Green-comb Spider-orchid</td>
<td>EN</td>
</tr>
<tr>
<td><em>Calandrinia sphaerocephylla</em></td>
<td>Bead Purslane</td>
<td>R</td>
</tr>
<tr>
<td><em>Calochilus campestris (NC)</em></td>
<td>Plains Beard-orchid</td>
<td>R</td>
</tr>
<tr>
<td><em>Centrolepis cephaloformis ssp. cephaloformis</em></td>
<td>Cushion Centrolepis</td>
<td>R</td>
</tr>
<tr>
<td><em>Centrolepis cephaloformis ssp. Murrayi</em></td>
<td>Cushion Centrolepis</td>
<td>R</td>
</tr>
<tr>
<td><em>Choretrum glomeratum var. chrysanthum</em></td>
<td>Yellow-flower Sour-bush</td>
<td>R</td>
</tr>
<tr>
<td><em>Cladium procerum</em></td>
<td>Leafy Twig-rush</td>
<td>R</td>
</tr>
<tr>
<td><em>Crassula exserta</em></td>
<td>Large-fruit Crassula</td>
<td>R</td>
</tr>
<tr>
<td><em>Crassula peduncularis</em></td>
<td>Purple Crassula</td>
<td>R</td>
</tr>
<tr>
<td><em>Crassula sieberiana</em></td>
<td>Sieber’s Crassula</td>
<td>E</td>
</tr>
<tr>
<td><em>Daviesia benthamii ssp. Humilis</em></td>
<td>Mallee Bitter-pea</td>
<td>R</td>
</tr>
<tr>
<td><em>Daviesia pectinata</em></td>
<td>Zig-zag Bitter-pea</td>
<td>R</td>
</tr>
<tr>
<td><em>Desmoclados diacolpicus</em></td>
<td>Bundled Cord-rush</td>
<td>V</td>
</tr>
<tr>
<td><em>Dianella longifolia var. grandis</em></td>
<td>Pale Flax-lily</td>
<td>R</td>
</tr>
<tr>
<td><em>Eremophila barbata</em></td>
<td>Blue Range Emubush</td>
<td>R</td>
</tr>
<tr>
<td><em>Eucalyptus behriana</em></td>
<td>Broad-leaf Box</td>
<td>R</td>
</tr>
<tr>
<td><em>Eucalyptus calycogona ssp. Spaffordii</em></td>
<td>Spafford's Square-fruit Mallee</td>
<td>R</td>
</tr>
<tr>
<td><em>Eucalyptus cretata</em></td>
<td>Darke Peak Mallee</td>
<td>R</td>
</tr>
<tr>
<td><em>Exocarpos strictus</em></td>
<td>Pale-fruit Cherry</td>
<td>R</td>
</tr>
<tr>
<td><em>Grevillea anethfolia</em></td>
<td></td>
<td>R</td>
</tr>
<tr>
<td>Species Name</td>
<td>Common Name</td>
<td>Conservation Status</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Grevillea pauciflora ssp. Leptophylla</td>
<td>Narrow-leaf Grevillea</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Haeckeria cassiniiformis</td>
<td>Dogwood Haeckeria</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Haegiela tatei</td>
<td>Small Nut-heads</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Hydrocotyle comocarpa</td>
<td>Fringe-fruit Pennywort</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Isotoma scapigera</td>
<td>Salt Isotome</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Lawrenzia berthae</td>
<td>Showy Lawrenzia</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Lepidium desvauxii</td>
<td>Bushy Peppercress</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Leptorrhynchos scabrus (NC)</td>
<td>Annual Buttons</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Leucopogon clevelandii</td>
<td>Cleland’s Beard-heath</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Leucopogon revolutus</td>
<td></td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Levenhookia stipitata</td>
<td></td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Lobelia heterophylla (NC)</td>
<td></td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Maireana excavate</td>
<td>Bottle Fissure-plant</td>
<td>AUS: R, SA: V</td>
</tr>
<tr>
<td>Melaleuca oxyphylla</td>
<td>Pointed-leaf Honey-myrtle</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Microlepidium pilosulum</td>
<td>Hairy Shepherd's-purse</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Myoporum parvifolium</td>
<td>Creeping Boobialla</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Olearia picridifolia</td>
<td>Rasp Daisy-bush</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Orobanche cernua var. Australiana</td>
<td>Australian Broomrape</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Phyllanthus calycinus</td>
<td>Snowdrop Spurge</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Pimelea williamsonii</td>
<td>Williamson’s Riceflower</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Pleuropappus phyllocalammeus</td>
<td>Silver Candles</td>
<td>AUS: V, SA: V</td>
</tr>
<tr>
<td>Poa drummondiana</td>
<td>Knotted Poa</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Poa fax</td>
<td>Scaly Poa</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Poa rodwayi</td>
<td>Velvet Tussock-grass</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Podolepis jaceoides</td>
<td>Showy Copper-wire Daisy</td>
<td>AUS: R, SA: R</td>
</tr>
<tr>
<td>Prasophyllum calcicola</td>
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<td>Wurmbea sinora</td>
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Conservation Ratings
*AUS = National Rating under the Environment Protection and Biodiversity Conservation (EPBC) Act 1999; SA = State Conservation Rating under the National Parks and Wildlife Act 1972 (South Australia); FR = Regional Conservation Rating for the Flinders Ranges Botanical Region.
E = Endangered; T = Threatened; V = Vulnerable; R = Rare; U = Uncommon (Taplin 2008)
8. Appendices

**Appendix 2**: Threatened Fauna Records for the WildEyre Region (DEWNR spatial database 2007)

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<th>Species Name</th>
<th>Common Name</th>
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<th>SA</th>
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<td><em>Ardea ibis</em></td>
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<td><em>Ardeotis australis</em></td>
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<td><em>Arenaria interpres</em></td>
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Conservation Ratings
*AUS* = National Rating under the Environment Protection and Biodiversity Conservation (EPBC) Act 1999; *SA* = State Conservation Rating under the National Parks and Wildlife Act 1972 (South Australia); *E* = Endangered; *T* = Threatened; *VU* and *V* = Vulnerable; *R* = Rare
Gilliam * Urban 2008 refers to the Species Risk Assessment for the Northern & Yorke undertaken in 2008. Ratings refer to expert opinion of the status within the Southern Flinders only — CR = Critically Endangered, EN = Endangered, VU = Vulnerable
** tally for species in addition to formally rated species only.
### 8. Appendices

**Appendix 3: Members of the WildEyre CAP Planning Team**

<table>
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<td>Andrew Freeman</td>
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<tr>
<td>Louise Mortimer</td>
<td>Department of Environment, Water and Natural Resources</td>
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<td>Rob Coventry</td>
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<td>Paul Hodges</td>
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<td>Justine Graham</td>
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<td>Emma Coates</td>
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<td>Matt Turner</td>
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<td>Todd Berkinshaw</td>
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<td>Stuart Collard</td>
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Appendix 4: Landscape Linkages Mapping (Koch 2013)

Map: Draft Landscape Linkages Plan
9. References


Northern and Yorke Natural Resource Management Board (2009), Northern and Yorke Regional NRM Plan.


