

**MANAGEMENT GUIDELINES FOR READ CREEK HILLS**

**A PROPERTY OF WORLDS END CONSERVATION PTY. LTD.**





## **ACKNOWLEDGEMENTS**

Worlds End Conservation Pty Ltd (WECPL) acknowledges the financial support of this project from a Caring for Our Country grant, as part of the Federal Government National Reserve System (NRS) program, and the financial support of the South Australian Department of Environment and Natural Resources (DENR), which has contributed to the establishment of this protected area. Worlds End Conservation Pty Ltd also acknowledges community support of the project by the Mid-North Grasslands Working Group, the Burra Rangelands Action Group, the Friends of Burra Parks, the Northern and Yorke DENR Consultative Committee and the Murray Darling Basin Natural Resource Management Board. Worlds End Conservation Pty Ltd also acknowledges support from the Mid-north District of the South Australian Department for Environment and Natural Resources for assistance with the format of this Interim Management Guidelines (IMG) document.

**Front page photograph:** Read Creek Hills looking north, August 2010. Photographer Ann Prescott.

**Header photograph:** Spiller's Wattle (*Acacia spilleriana*), listed as *Endangered* under the Environment Protection and Biodiversity Conservation [EPBC] Act and is listed as *Vulnerable* under the SA National Parks and Wildlife [NP&W] Act. It grows only in SA and its stronghold is in the Scrubby Peak Range which includes the Read Creek Hills property. Photographer Ann Prescott, August 2010.



## **MANAGEMENT GUIDELINES FOR READ CREEK HILLS**

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#### **INTRODUCTION**

Read Creek Hills is a 493ha property located about 15 km north-west of Robertstown and 15 km south of Burra in the mid-north of South Australia. This is approximately 200 km from Adelaide, in the North Eastern rangelands of South Australia (Figure 1).

The land comprises

Hundred of Bright Certificate of Title

Volume 5743, Folio 461, Sections 208

Volume 5815 Folio 129, Sections 210, 211, and 212

Volume 5403 Folio 707 Sections 73, 207, 209

Hundred of Aposinga Certificate of Title

Volume 5403 Folio 707 Section 454

This is approximately Latitude / Longitude 33° 51' 22" S, 139° 2' 17" E; or GPS UTM 54J 318490, 6252068.

The area is part of the final north-south range between the high grasslands and grassy woodlands of the mid-north and the semi-arid mallee shrublands where the land drops down to the Murray Mallee flats.

The land is part of the Murray Darling Basin. Read Creek and its tributaries within Read Creek Hills join Hopkins Creek and these flow into the Burra Creek, which flows into the River Murray at Morgan. Read Creek tributaries run through the northern side of this property and form an informal northern boundary to the land.

Historically, Read Creek Hills has been mainly a rough grazing property with a very small cleared area on flats in the south-east corner of the property. A central "pound" of Irongrass grasslands were the focus of this grazing activity. The land has areas of steep terrain and water was not easily available over much of the block.

The directors of the Worlds End Conservation Pty Ltd (WECPL) purchased the land in July 2010.

These Management Guidelines (IMG) have been prepared as a condition of purchase as specified by the Caring for Our Country program, which has contributed to the establishment of this protected area as part of the National Reserve System (NRS) program. This document outlines actions proposed to meet planning and management commitments and is intended to guide WECPL management for the short-term following the establishment of the protected area (a Heritage Agreement dedication is in progress).



The following points provide a summary of the agreement between WECPL and the Caring for Our Country program, National Reserve System (NRS) program of the federal government DEH:

- WECPL agrees to prepare Interim Management Guidelines (this document) for the property by October 2010, and prepare an appropriate management plan for the protected area in accordance with the proposed IUCN Protected Area Management Category IV within 2 years.
- WECPL agrees to undertake management and other works as necessary to ensure the on-going protection of the natural values of the property.

In addition the South Australian Department of Environment and Natural Resources has provided funds to WECPL for several management planning outcomes, being:

- Successful purchase of the property by Worlds End Conservation Pty Ltd.
- The creation of a Heritage Agreement to protect significant biodiversity in perpetuity.
- The development of a Property Management Plan, which complements the objectives of the DENR Hopkins Creek Conservation Park Management Plan and which incorporates a landscape scale approach to weed control, vermin control, and fire management to maximise biodiversity benefits.
- Participation in the development of a landscape Fire Management Plan incorporating a number of properties including Hopkins Creek Conservation Park, in conjunction with DENR, consistent with the DENR reserve fire management plans, and which covers the use of fire as a management tool and include fire response plans.

## **IUCN CLASSIFICATION**

The IUCN definition of a “Protected Area” is:

'A clearly defined geographical space, recognised, dedicated and managed, through legal or other means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values'.

The Read Creek Hills property meet the requirements of this definition by being an area of 493 ha adding value to CARRS, legally protected in perpetuity by Heritage Agreement, and managed well for nature conservation values. The land is clearly defined by cadastral boundaries, fenced, and registered on title.

### **Appendix B - Revised IUCN Protected Area Management Categories:**

The IUCN definition of a Category IV reserve - Habitat/Species Management Area is:

Protected areas that aim to protect particular species or habitats and management reflect this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.



Read Creek Hills seems to be the best fit under this category in the Appendix B Revised IUCN Protected Area Management Categories and are consistent with objectives of management outlined in these.

**IUCN lists the management objectives for Protected Area Category IV as the following.**

**Primary objective:**

To maintain, conserve and restore species and habitats.

**Other objectives:**

- To protect vegetation patterns or other biological features through traditional management approaches;
- To protect fragments of habitats as components of landscape-scale conservation strategies; To develop public education and appreciation of the species and/or habitats concerned;
- To provide a means by which the urban residents may obtain regular contact with nature.

Category IV protected areas are usually relatively small and certainly not complete functioning ecosystems, most will need regular management interventions to maintain their associated biodiversity:

The most suitable IUCN classification for Read Creek Hills is IUCN Category IV, Habitat/Species Management Area. Category IV protected areas are defined as areas that

- maintain conserve species and habitats
- protect vegetation patterns
- protect habitats as components of the landscape

Read Creek Hills will be managed mainly to conserve the range of ecosystems and flora and fauna species present and to provide limited biological survey and monitoring opportunities. Active management of the endangered *Lomandra effusa* Irongrass tussock grassland habitat may be required to retain and/ or improve its biodiversity values.

## **BIODIVERSITY AND HERITAGE VALUES**

### **Biology Values**

The area comprises 493 hectares in the larger Hallelujah Hills Worlds End area. The area is recognized as a special habitat area in the Biodiversity Plan for the Northern Agricultural District of South Australia as part of the Ridgeline Habitat for the Read Creek Hills. The ecosystems to be protected include approximately 65 hectares of the EPBC Act listed critically endangered ecological communities of *Lomandra effusa* tussock grassland on shallow loams in low hills.



Other known ecosystems include:

*Eucalyptus camaldulensis* +/- *Eucalyptus odorata* riparian woodland over *Myoporum montanum* along the major drainage line of Read Creek. Read Creek is recognised in the Biodiversity Plan for the Murray Darling Basin Natural Resource Management plan as one of the last remaining ecologically functioning creek and wetland systems in the eastern Mt. Lofty escarpment. In the Provisional List of Threatened Ecosystems of S.A. (DEH 2001) freshwater wetlands including aquatic Herblands/Sedgeland occurring in the agricultural regions of SA were listed as Endangered.

Small areas of *Eucalyptus porosa* +/- *Callitris gracilis* low open woodland on gentle slopes with red brown loams

Small areas of Drooping Sheoak *Allocasuarina verticillata* low woodland on rocky hills

The *Eucalyptus socialis* +/- *Eucalyptus oleosa* +/- *Eucalyptus brachycalyx* +/- *Eucalyptus gracilis* open mallee shrubland over a sparse shrub layer on quartzite rubble widespread on hilltops and ridges

The *Eucalyptus socialis* +/- *Eucalyptus brachycalyx* +/- *Eucalyptus gracilis* mallee shrubland over *Triodia* hummock grasses on exposed hilltops and ridges

Mixed *Acacia* shrublands including *Acacia spilleriana* *Acacia calamifolia*, *Eremophila alternifolia*, *Dodonaea*, *Senna* and *Bursaria* shrubland on shallow well drained soils of the lower slopes and ridges and on some saddles.

### **Conservation Values**

The property adds to the establishment of a comprehensive, adequate and representative reserve system (CARRS) by improving formal protection within the Flinders Lofty Block IBRA Region which is a high priority at a national and State level for new protected areas, with only 5.5% currently conserved. It is within the Broughton sub region which has less than 0.2% conserved in all forms of protected area, making it a very high priority for establishing new protected areas under the National Reserve System Program.

The Burra Hills Environmental Association is represented in the state NPWSA Reserve System by the new Mokota Conservation Park, the Hopkins Creek Conservation Park and two Heritage Agreements covering 95.34ha (0.13%).

### **Vegetation Associations and Associated Fauna**

As a result of natural variation in soil types and terrain, the native vegetation is a complex mosaic of low woodlands, tall shrublands, tussock grasslands, and open shrublands.



Read Creek Hills protects one vegetation association threatened in South Australia and a range of threatened plant species. The known vegetation communities and significant plants and animals are:

### 1. Communities

*Lomandra effusa* tussock grassland in the main valley and on slopes, listed as a critically endangered ecological community under the EPBC Act

### 2. Significant Plants (located on the property and/or within a 10 km buffer in similar habitats)

The property contains important preferred habitat for several species of threatened flora species found on the property or on the adjacent Hopkins Creek Conservation Park. These include:

*Acacia spilleriana*, **National:** Listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999*. **South Australia:** Listed as Vulnerable under the *National Parks and Wildlife Act 1972*.

*Arthropodium minus*, Small Vanilla Lily, vulnerable in the region

*Craspedia glauca*, Billy Buttons, rare in the region

*Daviesia benthamii ssp humilis*, Mallee Bitter-pea, state rare

*Goodenia albiflora*, White Goodenia, rated as uncommon for state and region

*Goodenia pinnatifida*, Cut leafed Goodenia, uncommon for the region and possibly significant for SA

*Maireana excavata*, Fissure Weed, unknown status for SA, endangered in the region

*Myriocephalus rhizocephalus*, Woolly Heads, uncommon for SA, endangered in the region

*Millotia tenuifolia*, Soft Millotia, rare for the region

*Olearia pannosa ssp. pannosa*, Silver Daisy-bush, vulnerable in Australia, vulnerable for SA and region

*Pimelia curvifolia*, Curved Riceflower, rare for SA, unknown status for region

*Phyllanthus saxosus*, Rock Spurge, not yet assessed but possibly significant

*Scleranthus pungens*, Prickly Knawel, uncommon for the region

*Tricoryne elatior*, Yellow Rush-Lily, rare for the region

*Trymalium wayae*, Grey Trymalium, uncommon for SA and region

### 3. Significant Fauna

The property also contains important preferred habitat for several species of threatened fauna species. These include:

Carpet Python, *Morelia spilota metcalfei*: - vulnerable in South Australia



Plains-wanderer, *Pedionomus torquatus* - nationally vulnerable, endangered in South Australia and vulnerable in the mid North

Adelaide Pygmy Bluetongue, *Tiliqua adelaidensis* - endangered in Australia and South Australia

Common Brushtail Possum, *Trichosurus vulpecula* – listed under NPW Act as rare

Common Dunnart, *Sminthopsis murina* – extension to known range

Diamond Firetail, *Stagonopleura guttata* – listed as declining in the MLR

Elegant Parrot, *Neophema elegans* - SA: Rare

Peregrine Falcon, *Falco peregrinus* - nesting

White-winged Chough, *Corocorax melanorhamphos* - SA: Rare

### **Threats to the Conservation Values**

There are five perceived threats which may impact on the conservation values of Read Creek Hills. These threats to the conservation values may be:

1. The total grazing pressure from introduced animals, including deer and goats, and over abundant native herbivores. This may be preventing the natural regeneration of sensitive species including the regionally rare *Acacia pycnantha*, Drooping Sheoak, *Allocasuarina verticillata* and native grasses in the mallee box grassy woodlands in the valleys and along the drainage lines.
2. Predation of native animals by foxes and cats.
3. The presence of pest plants including boxthorns and horehound.
4. Unauthorized access to the property for firewood collection, and for recreational use of off-road vehicles and trail bikes. This has been a problem until recently when the boundary public road was adequately fenced.
5. Vegetation clearance has occurred in a small area in the south-east corner of the property.

### **MANAGEMENT STRATEGIES**

The following management strategies reflect the management objectives for IUCN Category IV protected areas as defined in the IUCN Guidelines for Protected Area Management.

These management strategies for management of the land will be eventually incorporated into a formal management plan for the reserve.

#### **IUCN Category IV Protected Area**

'A clearly defined geographical space, recognised, dedicated and managed, through legal or other means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values'.





### Governance Arrangements

Read Creek Hills will be under the management of World End Conservation Company Pty Ltd (WECPL). The board of directors of WECPL meet each six months, and are responsible for drawing up a work plan to enable the implementation of the management strategies that will realise the conservation values of the property.

The Directors of WECPL appoint two members of their Board of Directors to the Read Creek Steering Committee, which is a requirement of the funding received under the MERI requirements of the National Reserve System Land initiative of the Australian Government. This Committee is required to meet at six monthly intervals to discuss the management of the Read Creek Hills.

The Directors of WECPL will work with the Department of Environment and Natural Resources, the Murray Darling Natural Resource Management Board, the Regional Council of Goyder and other neighbouring landholders to achieve landscape scale environmental conservation outcomes, through management of the perceived threats to the conservation values of the Read Creek region.

The Terms of Reference of Worlds End Conservation Company Pty Ltd are set out in the Constitution of Worlds End Conservation Pty Ltd. (ACN 106125357), and the company Charter and Code of Conduct.

### WECPL Protection Strategies

Read Creek Hills will be registered as a Heritage Agreement (HA), under the *Native Vegetation Act 1991*. This HA will be registered on the Certificate of Title in perpetuity.

A management plan will be established for the area as soon as practical to ensure the implementation of a suitable long-term management regime.

WECPL will maintain a limited network of vehicle access and maintenance tracks to allow for adequate management actions as identified in a formal management plan.

The property will be adequately fenced from stock and uncontrolled vehicle access. A maintenance program for the property fences, access tracks, and other assets will be undertaken.

WECPL has removed all sheep from the property and neighbours will be encouraged to remove stock as quickly as possible if they enter the property.

### **IUCN Category IV Primary Objective**

To maintain, conserve and restore species and habitats.

### WECPL Management Strategies

#### Management and Conservation

Surveys will be undertaken to gather baseline biodiversity information on the natural resources of the property, including the location and extent of threatened plants and animals.



Surveys will be undertaken to determine threats to the integrity of the property, and enable the development of suitable management strategies that will be included in the Management Plan.

Feral animal control programs will be implemented where required as necessary and identified in any management plan for the property. This is likely to include, goats, fox, and rabbit control, while feral deer control is already underway.

Pest plant control programs will be implemented where required as necessary and identified in any management plan for the property. This is likely to include horehound and boxthorn.

Monitoring programs will be established as outlined in the management plan.

Local expertise will be used wherever practical to assist with maintenance and management of the property.

Active management of the *Lomandra effusa* tussock grasslands to retain biodiversity values may be implemented as outlined in the Management Plan.

### Landscape-Scale Approach

WECPL will seek to undertake feral animal control programs and kangaroo management in this area as part of a landscape-scale program implemented by DENR and / or the MDB Natural Resource Management Board.

WECPL will seek to undertake pest plant control programs in this area as part of a landscape-scale program implemented by DENR and / or the MDB Natural Resource Management Board.

WECPL will seek to extend management of the property area as an integrated part of any a landscape-scale Integrated Natural Resource Management Board biodiversity protection and management initiative.

WECPL will assist with the development of a landscape Fire Management Plan, in conjunction with DENR, consistent with the DENR reserve fire management plans, and which covers the use of fire as a management tool and include fire response plans.

### People

WECPL will encourage the continuation of research undertaken on the property by appropriate groups and agencies.

WECPL will maintain boundary signage and prepare informational material for enquiries and hold public open days as appropriate.

WECPL will allow limited access for nature-based activities such as bird watching, nature photography, and low impact bush-walking.

WECPL will seek to maintain a small low-key accommodation building and a camping and picnic area for shareholders, researchers, and management workers, to allow for passive recreation and adequate management actions as identified in a formal management plan.



Public access will initially be limited to allow for the implementation of baseline monitoring programs, the protection of sites of significance and natural attributes, and to address any risk issues that are inherent with this property.

Public access to certain sensitive areas including populations of any critically endangered flora and fauna and all monitoring sites will be restricted.

## REFERENCES AND BIBLIOGRAPHY

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## Abbreviations

CARRS	Comprehensive, adequate, and representative reserve system
CfoC	Caring for Our Country
DENR	South Australian Department for Environment and Natural Resources
EPBC Act	Environmental Protection and Biodiversity Conservation Act
HA	Heritage Agreement
IMG	Interim Management Guidelines
IUCN	World Conservation Union (previously International Union for Conservation of Nature)
MDB	Murray Darling Basin
NRS	National Reserve System
WECPL	Worlds End Conservation Pty Ltd



## **Appendix IUCN Definitions of Category IV\*\***

### **Category IV: Habitat/species management area**

Protected areas aim to protect particular species or habitats and management reflects this priority. Many Category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.

#### **Primary objective**

To maintain, conserve and restore species and habitats.

#### **Other objectives:**

To protect vegetation patterns or other biological features through traditional management approaches;

To protect fragments of habitats as components of landscape-scale conservation strategies;

To develop public education and appreciation of the species and/or habitats concerned;

To provide a means by which the urban residents may obtain regular contact with nature.

Category IV protected areas are usually relatively small and certainly not complete functioning ecosystems, most will need regular management interventions to maintain their associated biodiversity:

#### **Distinguishing features**

Category IV protected areas usually help to protect, or restore:

- 1) Flora species of international, national or local importance;
- 2) Fauna species of international, national or local importance including resident or migratory fauna; and/or
- 3) Habitats. The size of the area varies but can often be relatively small; this is however not a distinguishing feature. Management will differ depending on need. Protection may be sufficient to maintain particular habitats and/or species. However, as Category IV protected areas often include *fragments* of an ecosystem, these areas may not be self-sustaining and will require regular and active management interventions to ensure the survival of specific habitats and/or to meet the requirements of particular species.

A number of approaches are suitable:

*Protection of particular species:* to protect particular target species, which will usually be under threat (e.g., one of the last remaining populations);

*Protection of habitats:* to maintain or restore habitats, which will often be fragments of ecosystems;

*Active management to maintain target species:* to maintain viable populations of particular species, which might include for example artificial habitat creation or maintenance (such as artificial reef creation), supplementary feeding or other active management systems;

*Active management of natural or semi-natural ecosystems:* to maintain natural or semi-natural habitats that are either too small or too profoundly altered to be self-sustaining, e.g., if natural



herbivores are absent they may need to be replaced by livestock or manual cutting; or if hydrology has been altered this may necessitate artificial drainage or irrigation;

*Active management of culturally-defined ecosystems:* to maintain cultural management systems where these have a unique associated biodiversity. Continual intervention is needed because the ecosystem has been created or at least substantially modified by management. The primary aim of management is maintenance of associated biodiversity. Active management means that the overall functioning of the ecosystem is being modified by e.g., halting natural succession, providing supplementary food or artificially creating habitats: i.e., management will often include much more than just addressing threats, such as poaching or invasive species, as these activities take place in virtually all protected areas in any category and are therefore not diagnostic. Category IV protected areas will generally be publicly accessible.

### **Role in the landscape**

Category IV protected areas frequently play a role in “plugging the gaps” in conservation strategies by protecting key species or habitats in ecosystems. They could, for instance, be used to:

- Protect critically endangered populations of species that need particular management interventions to ensure their continued survival;
- Protect rare or threatened habitats including fragments of habitats;
- Secure stepping-stones (places for migratory species to feed and rest) or breeding sites;
- Provide flexible management strategies and options in buffer zones around, or connectivity conservation corridors between, more strictly protected areas that are more acceptable to local communities and other stakeholders;

**Category IV** protected areas aim to protect particular species or habitats and management reflects this priority. Many Category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.

### **Category IV differs from the other categories in the following ways:**

#### Category Ia

Category IV protected areas are not strictly protected from human use; scientific research may take place but generally as a secondary objective.

#### Category Ib

Category IV protected areas cannot be described as “wilderness”, as defined by IUCN. Many will be subject to management intervention that is inimical to the concept of Category Ib wilderness areas; those that remain un-managed are likely to be too small to fulfil the aims of Category Ib.

#### Category II

Category IV protected areas aim their conservation at particular species or habitats and may in consequence have to pay less attention to other elements of the ecosystem in consequence, whereas category II protected areas aim to conserve fully functional ecosystems. Categories II and IV may in some circumstances closely resemble each other and the distinction is partly a matter of objective – i.e., whether the aim is to protect to the extent possible the entire ecosystem (category II) or is focused to protect a few key species or habitats (Category IV).

#### Category III

The objective of Category IV areas is of a more biological nature whereas category III is site-specific and more morphologically or culturally oriented.

#### Category V



Category IV protected areas aim to protect identified target species and habitats whereas Category V aims to protect overall landscapes/seascapes with value for nature conservation. Category V protected areas will generally possess socio-cultural characteristics that may be absent in IV. Where Category IV areas may use traditional management approaches this will explicitly be to maintain associated species as part of a management plan and not more broadly as part of a management approach that includes a wide range of for-profit activities.

#### Category VI

Management interventions in Category IV protected areas are primarily aimed at maintaining species or habitats while in Category VI protected areas they are aimed at linking nature conservation with the sustainable use of resources. As with Category V, Category VI protected areas are generally larger than Category IV.

\*\*Appendix text taken from <http://www.iucn.org/> and <http://www.environment.gov.au/parks/iucn.html>