

# Welford National Park

Management Plan

2011



Mulga Lands, Mitchell Grass Downs and Channel Country Bioregions

Prepared by:

Planning Services Unit

Department of Environment and Resource Management

© State of Queensland (Department of Environment and Resource Management) 2011

Copyright protects this publication. Except for purposes permitted by the *Copyright Act 1968*, reproduction by whatever means is prohibited without the prior written permission of the Department of Environment and Resource Management. Enquiries should be addressed to Department of Environment and Resource Management, GPO Box 2454, Brisbane Qld 4001.

#### Disclaimer

This document has been prepared with all due diligence and care, based on the best available information at the time of publication. The department holds no responsibility for any errors or omissions within this document. Any decisions made by other parties based on this document are solely the responsibility of those parties. Information contained in this document is from a number of sources and, as such, does not necessarily represent government or departmental policy.

This management plan has been prepared in accordance with the *Nature Conservation Act 1992*.

This management plan does not intend to affect, diminish or extinguish native title or associated rights.

Note that implementing some management strategies might need to be phased in according to resource availability.

For information on protected area management plans, visit <[www.derm.qld.gov.au](http://www.derm.qld.gov.au)>.

If you need to access this document in a language other than English, please call the Translating and Interpreting Service (TIS National) on 131 450 and ask them to telephone Library Services on +61 7 3224 8412.

This publication can be made available in alternative formats (including large print and audiotape) on request for people with a vision impairment. Contact (07) 322 48412 or email <[library@derm.qld.gov.au](mailto:library@derm.qld.gov.au)>.

Front cover photograph: Welford National Park. Photo: John Augusteyn, DERM.

Top right photograph: Seedling in sand dune, Welford National Park. Photo: John Augusteyn, DERM.

Centre right photograph: Welford National Park landscape. Photo: John Augusteyn, DERM.

Bottom right photograph: Sunset at Welford National Park. Photo: John Augusteyn, DERM.

May 2011

ISSN 1037-4698

MP048

# Vision statement

Welford National Park is managed to conserve the quality and integrity of the park's natural values, including the natural landscapes, diverse plant communities and wildlife. Management of the park aims to protect cultural heritage values and provide a remote area experience for visitors.

## Contents

<b>1. Management intent</b>	<b>1</b>
<b>2. Basis for management</b>	<b>1</b>
<b>3. Location and regional context</b>	<b>1</b>
<b>4. Protecting and presenting the park's values</b>	<b>2</b>
4.1 Landscape	2
4.2 Native plants and animals	4
4.3 Indigenous culture	5
4.4 Shared-history culture	6
4.5 Tourism and visitor opportunities	7
4.6 Education and science	8
4.7 Partnerships	9
4.8 Site-specific management (if required)	10
<b>5. Other key issues and responses</b>	<b>10</b>
5.1 Pest management	10
5.2 Fire management	12
5.3 Climate change	12
<b>6. References</b>	<b>14</b>
<b>7. Hyperlinks</b>	<b>15</b>
<b>8. Appendixes</b>	<b>16</b>
Appendix A – Maps	17
Appendix B – Definitions	20
Appendix C – Tables	21

## 1. Management intent

The Welford National Park Management Plan provides direction and policy to guide planning and decision-making to protect and maintain representative examples of regional ecosystems in the Channel Country, Mitchell Grass Downs and Mulga Lands bioregions on the park. The management directions outlined in this plan are intended to:

- conserve significant areas of Mulga Lands, Mitchell Grass Downs and Channel Country bioregions and associated natural values
- manage pest plants and animals, where possible, with control methods having minimal adverse impacts on the park's natural values
- maintain the integrity of Indigenous and non-Indigenous cultural heritage values
- incorporate the interests and rights of Traditional Owners and their affiliation to the area
- provide nature-based recreation activities in a remote landscape setting
- promote the park as a nature-based area with a focus on nature appreciation activities
- encourage scientific and cultural research
- foster and maintain community partnerships and participation in park management.

## 2. Basis for management

Welford National Park is managed according to the management principles for national parks defined in the *Nature Conservation Act 1992*.

The Queensland Parks and Wildlife Service (QPWS), part of the Department of Environment and Resource Management (DERM), is responsible for the park's day-to-day management. Where not specifically provided for in this plan, it will be managed in accordance with the Nature Conservation Act, associated regulations and policies to permanently protect, to the greatest possible extent, the area's natural condition and protect cultural resources and values. The national park will be managed to ensure that the only use of the area is nature-based and ecologically sustainable.

Cultural resource management is in accordance with the Burra Charter and The Charter for the Protection and Management of the Archaeological Heritage, which provide detailed guidelines for managing cultural heritage places. The *Queensland Heritage Act 1992* and the *Aboriginal Cultural Heritage Act 2003* provides the legislative framework to manage cultural heritage places on the park. The entire protected area is listed on the Queensland Heritage Register as a state heritage place.

All Indigenous places of historic or prehistoric significance, whether or not previously known or assessed, are also protected under the provisions of the *Cultural Record (Landscapes and Queensland Estate) Act 1987*. Indigenous people have affiliations with this park and involving Traditional Owners is an important part of management. Commonwealth and Queensland Government legislation provides for the recognition and protection of native title.

The park supports migratory species listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (that is, those species listed under the Bonn Convention, the China–Australia Migratory Bird Agreement, the Japan–Australia Migratory Bird Agreement and/or Korea–Australia Migratory Bird Agreement).

Species of conservation significance are listed under the Nature Conservation (Wildlife) Regulation 2006. DERM has responsibility under the *Land Protection (Pest and Stock Route Management) Act 2002* for controlling declared pest plants and animals on protected areas.

## 3. Location and regional context

Welford National Park was gazetted in December 1994 and is approximately 124 000 ha, supporting significant landscape features and biological communities of the Mulga Lands, Mitchell Grass Downs and Channel Country bioregions. Welford National Park's northern boundary is 30 km south-east of Jundah. Situated on the Barcoo River, the park can be accessed by travelling from Jundah, Windorah, Blackall or Quilpie. It is roughly bounded by the latitudes 24° 46' and 25° 13' and the longitudes 143° 3' and 143° 36' (Appendix A Map 1). The property description is Lot 41 on Plan NPW438 Parish of Dornoch, County of Cheviot in the shires of Barcoo and Isisford. Access both to and in the park is via formed dirt roads and rain readily prevents access.

Welford National Park is made up of three former grazing properties—Adaford, Gwandalan and Old Jedburgh holding—and is named after Richard Welford, a previous owner of one of the properties. Neighbouring lands include cattle and sheep grazing properties and stock routes. Substantial areas of gidgee and mulga have been cleared on some of these properties and some have been seeded with buffel grass *Pennisetum ciliare* (EPA, 2003).

Welford National Park forms part of the popular tourist drive to central-west Queensland parks, economically significant to the local community. The nearby towns of Jundah, Quilpie, Windorah and Blackall provide tourist information services, fuel, mechanical repairs, food and other supplies for park visitors. The shift from labour-intensive sheep stations to cattle holdings over the past 10 to 15 years, combined with increased mechanisation, has contributed to a significant and steady decline in the region's population with fewer employment opportunities (Desert Channels Queensland, 2004). With more Australians interested in connecting with their cultural roots and exploring the outback, together with improved roads and associated services, towns that were once home to large numbers of sheep shearers and sheep industry workers now depend on tourism rather than pastoralism for their major income. Natural and cultural assets are now seen as commodities with commercial value, affecting access to and management of protected areas, including Welford National Park (Desert Channels Queensland, 2004).

There are three distinct seasons in the region. Most of the annual rainfall, averaging about 400 mm, is received in mid-summer to mid-autumn, where winds are predominately south-easterly to north-easterly. Late autumn and winter produce fine, clear days with cold nights and strong, southerly and south-easterly winds. The storm season in spring and early summer is typified by humid weather from the north-east and hot weather from northern and inland Australia.

## 4. Protecting and presenting the park's values

### 4.1 Landscape

#### 4.1.1 Geology and landscape

Welford National Park is positioned in a broad transitional zone between eastern and western Queensland, and this is reflected in the diversity of native plants and wildlife, and a mosaic of landscape types, including braided river channels, sand dunes and dissected uplands. Welford's stunning red desert dunes are the north-eastern extent of the Lake Eyre sand dune system, making them some of Australia's most easterly desert dunes. They provide a stark contrast to white-barked ghost gums *Corymbia dallachiana* and golden-green tussocks of spinifex and seasonal wildflowers.

More than half the park lies in the Mulga Lands Bioregion. This eastern section is dominated by stony hills and silcrete uplands (residuals) with shallow, loamy lithosols that often have a gravelly or stony surface. These hills and ranges provide suitable habitat for yellow-footed rock-wallabies *Petrogale xanthopus* celeries and support vegetation, such as mulga *Acacia aneura*, lancewood *Acacia petraea*, bendee *Acacia catenulata* and bastard mulga *Acacia stowardii* shrublands. Nineteen of the 90 land systems described as part of the Mulga Lands Bioregion are found on the park, and of these, 11 are currently conserved only in Welford National Park.

Sand plains with many small sandhills and fewer, larger but more mobile steep-sided sand dunes, dominate the park's western end. The park's southern edge is bordered by the Barcoo River and the adjacent floodplain comprised of riparian forest, treeless areas of cracking clay, isolated tree-lined ephemeral waterholes, Mitchell grass downs and gibber or ironstone flats (Porter, 2004).

The park's far eastern edge is a small area of undulating rises and low hills with stony, brown cracking clays supporting a thin grove of gidgee *Acacia cambagei* woodlands with leopardwood *Flindersia maculosa* and sandalwood *Santalum lanceolatum* common in the upper layer (Addicott, 1998). This borders soft mulga on sandy soils with a spinifex understorey. This very small portion of the park lies within the Mitchell Grass Downs Bioregion and, outside of the park, this vegetation community has been extensively cleared (Addicott, 1998).

The spinifex-clad sandhills and associated sand plains, interspersed with soft mulga woodland in the west of the park, are the most easterly example of this landform in central Queensland and this — together with the remoteness, rugged landscape and abundant wildlife — are key attractions for the park.

Landscapes have been changed by pastoral activities. Sections of the park are recovering from the impacts of grazing, but high densities of macropods can hamper rehabilitation.

The majority of the road network in Welford National Park was established to meet community or commercial requirements for the area. Before the park was gazetted, a series of seismic lines was created to find the depth and density of sedimentary rock systems. While some seismic lines have naturally regenerated, some of these roads and tracks have been adapted to form tourist routes and others help park management.

The area has also been surveyed for petroleum resources with a well drilled to a depth of 2668 m in the Cooper Basin in 1986. No hydrocarbons were found (P. Ferenczi, pers. comm., 2009).

Gazetted roads pass through the park and are generally well maintained and passable in dry conditions. In future, some of these roads may be sealed, providing easier access and potentially higher visitor numbers. The park's main visitor routes are well maintained so are generally passable to appropriate vehicles in dry weather. Unauthorised driving off designated tracks and on disused seismic lines commonly occurs. This creates a safety risk, damages visual amenity and compromises conservation goals.

The park's riparian areas remain in good condition, although the lack of proper bush toileting and scavenging of bush timber for firewood in camping areas is a concern.

Desired outcomes 2021	Actions and guidelines
Landscape visual amenity is not interrupted by unnecessary fences, seismic and exploration tracks.	<p>A1. Maintain fences required for management and/or with heritage listing and, where feasible or practical, remove fences that are not required.</p> <p>A2. Allow seismic lines and exploration tracks not required for park management to rehabilitate naturally.</p> <p>A3. Ensure new infrastructure is appropriate to the landscape setting.</p>

#### 4.1.2 Water

The health of waterways in the central west is good, with relatively undisturbed catchments, unregulated rivers and near-natural water flows (Department of Infrastructure and Planning, 2009). The park consists largely of dissected residual ranges that feed several creek systems. These run into the Barcoo River, forming part of the drainage basin for the Lake Eyre catchment. The Lake Eyre Basin is one of the world's largest unregulated wild river systems, draining internally, not into the sea (DERM, 2008).

The Barcoo River typically breaks its banks at about 9 m, spilling onto the floodplains, filling up many smaller braided channels following good rain in December or January. Flood waters steadily recede to permanent waterholes by spring, before the late summer flooding rains return. As well as the Barcoo River bordering the park's southern boundary, Welford has small seasonal creeks, channels and permanent lagoons close to the homestead. The lagoon to the east of the homestead provides refuge to wildlife and reliably supplies the homestead with water for many months of the year. If the lagoon stagnates, the Barcoo River is an alternative water supply.

A minimum of 15–20 mm of rain will cut local roads (K. Coulthard, pers. comm., 2008). Thus, water backing up from good rainfall in adjacent areas of the catchment may also cause temporary road closures and catch tourists unawares.

Like many other national parks in western Queensland, Welford has numerous artificial water sources as a legacy of domestic stock grazing. Most of the dams are well engineered and effectively collect water from streams and overland flow to retain water year round (S. McDonald, pers. comm., 2008). Some dams have been fenced to exclude feral animals, domestic stock and macropods and others have been decommissioned with earthworks. While it is desirable to retain some dams for fire management, closing artificial watering points to animals will increase the distance that water-dependant species, such as macropods and pest animals, must travel to drink. Some native species may respond positively to vegetation changes after reduced grazing pressure or reduced interactions (competition or predation) with water-dependent species (Pople and Page, 2001).

Welford National Park lies squarely within the bounds of the Great Artesian Basin that delivered a reliable source of groundwater to pastoral activities in the area. Permanent water allowed sheep and cattle to be raised on the Mitchell grass, mulga and spinifex plains, an otherwise impossible feat in these semi-arid lands. Before the properties were gazetted as a national park, 17 water bores were drilled. With pastoral activities stopped, groundwater is no longer required to manage the land, and all bores within the park are now capped. This has reduced water wastage and improved pressure, allowing artesian spring flows to recover. Some water bores are occasionally prone to leak and in grassy areas, such as the spinifex grasslands, dripping or leaking bores can support large numbers of macropods, causing some severe impacts on those areas (Akers, pers. comm., 2008).

Empty heritage-listed water troughs are scattered throughout the park at bore sites, and all windmills have been decommissioned, some in good condition and others in disrepair.

Desired outcomes 2021	Actions and guidelines
Closure of artificial water points contributes to conserving the park's biodiversity.	A4. Continue to maintain fences and fluming to exclude access to artificial waters by stray stock, pest and native animals.

Desired outcomes 2021	Actions and guidelines
	A5. Water taken from the park is consistent with DERM's operational policy for water extraction from QPWS estates.
Groundwater quality is maintained or enhanced by park management activities.	A6. Avoid management actions that may compromise hydrology and/or natural values. A7. Bores on the park remain capped.

## 4.2 Native plants and animals

### 4.2.1 Native plants

Welford National Park contains a variety of plants typical of the Mulga Lands, Mitchell Grass Downs and Channel Country bioregions. Currently, 24 regional ecosystems are mapped and conserved on the park. Of these, five are of concern (Appendix A Map 2).

The main channels of the Barcoo River are lined with river red gums *Eucalyptus camaldulensis* and coolabah *Eucalyptus coolabah*, with tea tree *Melaleuca linariifolia* also common on the banks. Herbfields are common on the cracking clay floodplains between the river and channels, and gidgee *Acacia cambagei* and false sandalwood *Eremophila mitchellii* occur on the infrequently flooded alluvial plains. Further upstream, around the headwaters and upper tributaries of Sawyer's Creek in the Mulga lands, are woodlands of poplar box *Eucalyptus populnea* and river red gums, with large areas of mulga *Acacia aneura*.

The vegetation communities on the park contain more than 300 native plant species, including *Ptilotus pseudohelipteroides*, listed as near threatened under the Nature Conservation (Wildlife) Regulation 2006. A further four species — mountain yapunyah *Eucalyptus thozetiana*, bendee *Acacia catenulata*, lancewood *Acacia shirleyi* and poplar box — are regionally significant as they are at the extreme western limits of their distributions. Giant grey spinifex *Triodia longiceps* is found on the lower slopes of the park's ranges and is uncommon in the surrounding Mulga Lands Bioregion.

On the sand plain land system, the larger sand dunes support isolated low shrubs, such as the stunning and unusual parrot pea *Crotalaria cunninghamii* and sandhill grevillea *Grevillea stenobotrya*. The smaller, more common sand dunes are dominated by sandhill hopbush *Dodonaea viscosa* subsp. *angustissima* and *Eremophila* spp.

Since being managed as a national park and with grazing reduced, the park has seen some reappearance of native grasses, such as small flinders grass *Iseilema membranaceum*, button grass *Dactyloctenium radulans*, katoora grass *Sporobolus actinocladus* and barley mitchell grass *Astrebla pectinata*.

Desired outcomes 2021	Actions and guidelines
The park's native plant communities and species are conserved and, in particular, significant communities and species are protected from threatening processes.	A8. Allow natural regeneration of grazed and disturbed areas and, where necessary, revegetate using local native species. A9. Work with neighbours to maintain boundary fences, where necessary, to exclude livestock grazing from the park and promote regeneration of native communities.
Knowledge of ecological requirements of vegetation communities, especially species of conservation significance, is increased.	A10. Maintain and contribute to DERM's geographic information systems and databases as the basis for recording and storing data relating to native plant monitoring.

### 4.2.2 Native animals

Welford National Park supports a wide variety of habitats and protects abundant birdlife. Several birds are at or near the limits of their distribution, including orange chats *Epthianura aurifrons*, blue bonnets *Northiella haematogaster*, barking owls *Ninox connivens* and chestnut-crowned babbler *Pomatostomus ruficeps*. Three species of migratory birds have been recorded on the park (Appendix C) — the rainbow bee-eater *Merops ornatus*, glossy ibis *Plegadis falcinellus* and marsh sandpiper *Tringa stagnatilis*, which are all protected under international agreements (China–Australia Migratory Bird Agreement and the Japan–Australia Migratory Bird Agreement).

Many waterholes on the Barcoo River floodplains are vital refuges for pelicans *Pelecanus conspicillatus*, brolgas *Grus rebicunda*, black swans *Cygnus atratus*, whistling kites *Haliastur sphenurus*, cormorants *Phalacrocorax* spp, whiskered terns *Chlidonias hybrida* and many other species. Mulga woodlands are home to mulga parrots *Psephotus varius*, red-winged parrots *Aprosmictus erythropterus*, mallee ringnecks *Barnardius zonarius barnardi*, blue bonnets and the vulnerable Major Mitchell’s cockatoo *Lophochroa leadbeateri*. Nomadic budgerigars *Melopsittacus undulates* are regularly on the move, their preferred diet of grass seeds also shared by emus *Dromaius novaehollandiae* and Major Mitchell’s cockatoos on the grassy plains. Near threatened grey falcons *Falco hypoleucos* can be found patrolling the skies near the Barcoo River.

Other species, which are near the limits of their range in Welford National Park’s vicinity, may be used to monitor and assess the effects of management actions, such as fire regimes and pest animal control programs. Yellow-footed rock-wallabies *Petrogale xanthopus celeris* are approaching the western limit of their distribution (Porter, 2004). Although a common species under the Nature Conservation (Wildlife) Regulation 2006, this species has substantially declined in South Australia and New South Wales, where many local populations are threatened. The Barcoo River is effectively the western limit of the park’s only arboreal mammal, common brushtail possums *Trichosurus vulpecula* (Porter, 2004). Brushtail possums and Major Mitchell’s cockatoos rely on tree hollows in the riparian zones for shelter and nest sites. As ground foragers, the possums are susceptible to predation by cats *Felis catus* and foxes *Vulpes vulpes*. Although not restricted to sandy areas, sandy inland mice *Pseudomys hermannsburgensis* reach their eastern limit around Welford National Park. They may be a good indicator of the health of spinifex and sand-dominated habitats (Porter, 2004).

Cracking soils, spinifex grasslands and hollow logs in timbered country all provide ideal habitats for small carnivorous mammals.

Red kangaroos *Macropus rufus*, eastern grey kangaroos *Macropus giganteus* and common wallaroos *Macropus robustus* are common on the grassy plains, and can significantly boost grazing pressure on the park, particularly during dry periods. Annual aerial surveys monitor macropod numbers for the broader area, including the park. Twelve species of frogs have been recorded in the permanent waterholes, artificial waters and the river on the park. These include the greenstripe frog *Cyclorana alboguttata*, broad-palmed rocketfrog *Litoria latopalmata* and the emerald spotted treefrog *Litoria peronii*, all of which are at the limit of their known range.

The University of Canberra has conducted regular surveys to study the genetics and population structure of Emmott’s short-neck turtle *Emydura macquarii emmotti*. Also known as the Cooper Creek turtle, the species is restricted to the Cooper Creek and Diamantina river systems, concentrating in the remaining waterholes during extended dry periods.

Welford National Park is listed in Schedule 6 of the Nature Conservation (Protected Areas Management) Regulation 2006 where fish and invertebrate animals may be legally taken. Fishing is a popular recreation activity for park visitors, with bass *Macquaria novemaculeata* and yellowbelly *Macquaria ambigua* the target species.

Desired outcomes 2021	Actions and guidelines
<p>The park’s diversity of native animal species is conserved and populations of species of conservation concern are maintained and, where appropriate, enhanced through appropriate management regimes.</p>	<p>A11. Implement recovery actions, research recommendations and arid parks management guidance for species of high conservation significance as plans or information become available.</p> <p>A12. Maintain and enhance habitat requirements for all native species, particularly those of conservation significance, through appropriate management strategies.</p> <p>A13. Continue to record the distribution of threatened and significant native animal species. In particular, undertake targeted surveys for species of conservation significance predicted to occur in the park.</p> <p>A14. Maintain and contribute to DERM’s geographic information systems and databases as the basis for recording and storing data relating to the monitoring of native wildlife.</p>

### 4.3 Indigenous culture

There are numerous examples of Aboriginal cultural heritage on the park, including ceremonial sites and artefact scatters. Ceremonial sites are part of a network of significant places (including natural features) that together form a larger ritual landscape. They are visible remains of areas where important and often sacred rituals were performed and should be accorded due respect. As such, knowledge and access to these places may need to be restricted to Traditional Owners. A full cultural heritage survey has not been undertaken on Welford National Park, and it is likely that other heritage remnants, both of Aboriginal and post-settlement origin, are yet to be found (DERM, 2003).

While QPWS has legal responsibility to protect Indigenous sites on the park, it acknowledges the right of Traditional Owners to make decisions about their own heritage. Traditional Owners need to be consulted and involved in managing Indigenous sites and related park management issues, and promoting and presenting Indigenous culture and history.

At the time of writing, there were no registered native title claims over the park and further investigations are required to gain a more comprehensive understanding of Indigenous use. The main threats to the area's Indigenous cultural heritage sites include natural erosion, particularly during floods, invasion by vegetation and removing or disturbing artefacts.

Desired outcomes 2021	Actions and guidelines
The park's integrity of Indigenous culture is retained.	<p>A15. Maintain the confidentiality and integrity of the park's cultural heritage sites, material and information by preparing protocols and procedures in collaboration with Traditional Owners and/or the local Indigenous community.</p> <p>A16. In partnership with Traditional Owners and/or the local Indigenous community, develop cultural heritage awareness training programs for park staff.</p> <p>A17. Investigate the possibility of incorporating Indigenous connections through interpretive information, in collaboration with Traditional Owners and/or the local Indigenous community.</p>
Places of particular cultural and heritage significance are identified and managed in accord with the wishes of Traditional Owners.	<p>A18. Work cooperatively with Traditional Owners to ensure native title cultural impact assessments are incorporated into any development proposals or operational works that have the potential to impact on the park's Indigenous sites and places.</p> <p>A19. In collaboration with Traditional Owners, seek and record further information about the park's history and cultural heritage, and identify and map Indigenous cultural heritage places on the park.</p>

#### 4.4 Shared-history culture

Welford Downs was taken up in about 1870 by Richard Welford, who migrated to Australia from Britain in 1863. The homestead on Welford National Park illustrates Queensland's early exploration and settlement as pastoral land. Constructed in 1882–83 using the pise method (a form of rammed earth construction), the homestead is a rare surviving example of its type. It demonstrates a high degree of creative achievement in using natural resources for building. It has the potential to yield information through historical and archaeological research that will add to Queensland's history. It is uncommon to find an intact homestead setting that demonstrates the principal characteristics of its class so well, contributing to our understanding of early station life (DERM, n.d). Before it was gazetted as a national park, Welford Station had special associations with the community as one of the first pastoral stations in the region.

The entire park, including the homestead complex, is listed on the Queensland Heritage Register. The homestead was severely damaged by fire in 1956 and the stone kitchen, which became unsafe after heavy rain, was demolished in 1963. Major renovations were undertaken in 1989, and the homestead is now the park ranger's residence and not available for public viewing. Associated historic buildings include ringers quarters, stone cottages, and the meat and poultry house. Maintaining critical infrastructure (housing and work areas) is carried out as needed when resources are available and with exemption or other approvals. The site's entry on the Queensland Heritage Register needs to be reviewed to adjust heritage boundaries on the park (J. Ruig, pers. comm., 2008). This will remove the need for field staff to apply for exemptions to undertake work in some areas of the park where cultural heritage values will not be affected.

Typical of many sheep yards throughout the district, arsenic was commonly used to dip sheep at Welford. The spray race area of the sheep yards is a contaminated site as defined by the Environmental Protection Act 1994 and signs prohibit visitors entering the spray race. The nearby shearing shed and shearers quarters have potential to be interpreted, and may be incorporated into the Mulga Drive following minor re-routing of the road.

Other relics of the park's pastoral history include dog netting and livestock fences, old water bores, windmills and stockyards. The remains of a polocrosse ground, including collapsed horse yards, loading ramp, bough shed bar, timber log seats and corrugated iron toilet, can be found near the Jundah–Quilpie Road on the northern banks of the Barcoo River.

Several pre-acquisition waste dumps, potentially containing evidence of up to 140 years of human activity at Welford as a pastoral property, exist on the park close to the homestead. They are important archaeological resources and have been assessed using the criteria in the QPWS operational policy for managing disused dumps. Regulated wastes have been removed from the dump sites, and both Indigenous and non-Indigenous artefacts can be found at some sites. Several management options have been considered, from leaving the site as is, to fencing off and interpreting the dumps, and removing or burying surface materials.

Desired outcomes 2021	Actions and guidelines
The integrity of the park's historical heritage values is maintained.	A20. Maintain the integrity of the historical heritage precinct. A21. Seek advice from the DERM cultural heritage branch before carrying out work on or adjacent to cultural heritage sites or places.
Infrastructure required for park management is maintained to departmental standards in sound and safe condition.	A22. Review the entry on the Queensland Heritage Register for the entirety of Welford National Park and provide a zone map for culturally significant sites needing to remain on the register.
The historic dump sites are a record of human activity potentially providing an archaeological resource for the history of occupation and use of heritage places. These sites and the sheep spray race site are not a safety or environmental hazard.	A23. Assess the park's dump sites and retain only those dump sites that are culturally significant. Ensure the park's dump sites are closed to the public, limiting exposure to safety hazards. A24. Erect fencing to restrict visitor access to the contaminated spray race site and add the site to the Environmental Management Register (EMR).

## 4.5 Tourism and visitor opportunities

Welford is one of nine popular national parks in central west Queensland, each with distinct values. Welford National Park is a land of contrasts and provides an experience of rugged and remote mulga lands, stunning and diverse channel country and Mitchell grass downs environments. Visitors and the local community can enjoy low-impact nature-based recreation activities, such as camping, canoeing, sightseeing, birdwatching, walking, fishing and photography.

Visitation levels are moderately low, and the majority of people visit in the winter months (June and July). Park visitors are predominately retirees using four-wheel-drive vehicles to travel the east–west tourist route of Charleville, Quilpie, Windorah and Birdsville. Visitors with two-wheel-drive vehicles and camper trailers are able to access sections of Welford, particularly the Barcoo River environs. This visitor group typically visits the park for a day and seeks overnight accommodation in Jundah. Other visitors with off-road vehicles and camper-trailers are more likely to remain in the park for a few days, using the campground as a base for exploring the park's four-wheel-drive tourist drives (Appendix D).

Information about the park can be downloaded from the DERM website, or collected from regional offices in Rockhampton and Longreach, and other regional tourist information centres. Comprehensive park information and orientation signs will be installed at the Little Boomerang camping area and map-based orientation signs at both park entrances will give visitors directions through the park.

Basic camping areas are provided at Little Boomerang and Trafalgar waterholes on the Barcoo River. Annual floods present management challenges, limiting visitor infrastructure at these sites.

The park lacks formal walking tracks, but the current level of visitation lets visitors carefully explore sand dunes and stroll along the sparse vegetation of the Barcoo River bank. Sawyer's lookout is the only designated lookout, but visitors can easily reach several vantage points on high rocky outcrops throughout the park to admire scenic views of the surrounding plains and channels. The vehicle track off the Mulga Drive to Sawyer's lookout is rough and potentially difficult to negotiate even in a four-wheel-drive vehicle. Site planning and management is required to exclude vehicle access and provide a basic, low-level walking track (class 4 Australian standard) to the lookout.

An opportunity exists to establish a small bush camp site at Sawyer's Creek, near the lookout. Positioned at the northern extent of the Mulga Drive, a small bush camp site established at Sawyer's Creek will provide a different camping experience to that of the Little Boomerang camp ground.

Several commercial tour operators conduct guided activities in the park. Competent tour operators can play an important role in promoting conservation messages by helping visitors to appropriately use and appreciate the park and its special values, creating a high-quality visitor experience. Commercial activities may range from organised tag-along four-wheel-drive tours to purpose-built off-road bus tours, involving day tours or camping on the park.

Desired outcomes 2021	Actions and guidelines
A range of low-key, sustainable nature-based recreation opportunities are available on the park to encourage enjoyment and appreciation of the park's unique character and complement other opportunities in the region.	<p>A25. Develop and implement a site plan converting access to Sawyer's lookout into a walking track.</p> <p>A26. Review and continue to implement the visitor management strategy for the Longreach area national parks.</p>
Visitor infrastructure is appropriate for the desired remote recreation setting, level of use and floods.	<p>A27. Ensure visitor infrastructure reflects the park's unique character.</p> <p>A28. Install signs and bollards to define, as appropriate, the camp ground boundary in flood-prone areas and in accordance with landscape settings.</p> <p>A29. Investigate the feasibility of providing toilets outside of the flood zone.</p> <p>A30. Install temporary traffic counters on key public access roads periodically to determine and monitor visitor use of the park.</p> <p>A31. Identify designated visitor routes with signs appropriate to the landscape setting.</p> <p>A32. Erect, where necessary, service vehicle signs for park management roads to avoid visitors becoming disoriented.</p>
Impacts from camping are minimised and restricted to designated camping locations.	<p>A33. Conduct and implement site planning for the Little Boomerang Waterhole camping area to provide more segregated camp sites, improve traffic flow and protect surrounding vegetation, using minimal infrastructure.</p> <p>A34. Convert the Trafalgar Waterhole camp ground to a day-use area, allowing locals and other park visitors to fish and picnic.</p> <p>A35. Examine opportunities to develop a vehicle-based remote camping area, appropriate to the landscape setting, near Sawyer's Creek on the Mulga Drive.</p> <p>A36. Encourage visitors to use fuel stoves and prohibit camp fires in the park.</p>
Scenic drive routes provide safe and enjoyable circulation of visitors.	<p>A37. Manage the Desert, River and Mulga drives as the key recreation driving opportunities to present the park's diversity (Appendix E).</p> <p>A38. Investigate the practicality of extending the Mulga Drive into a loop road to improve visitor safety and enjoyment.</p> <p>A39. Investigate the feasibility of re-routing the Mulga Drive away from the homestead to incorporate the shearing shed and quarters and reconnect with the drive on the western side of the homestead.</p>
Commercial tourism operations are managed to minimise environmental impacts and maintain high levels of visitor satisfaction.	<p>A40. Commercial activity permits may be granted subject to any conditions necessary to minimise impacts.</p> <p>A41. Continue to liaise with commercial tour operators to ensure correct information is disseminated to their clients.</p>

## 4.6 Education and science

### 4.6.1 Education

Welford National Park provides ideal natural and cultural resources for formal and informal education. Use of the park by education groups, including schools (especially schools in Jundah, Stonehenge, Windorah, and Yaraka), Landcare groups, field naturalists, birdwatching and other special interest groups, should be encouraged.

Desired outcomes 2021	Actions and guidelines
Visitors and the local community are aware of, understand and support the park's natural and cultural values and their responsibilities for minimal impact use.	<p>A42. Continue to promote understanding and appreciation of the park's natural and cultural values through the DERM website and publications.</p> <p>A43. Explore the use of the shearing quarters by tour and educational groups.</p>

Desired outcomes 2021	Actions and guidelines
The park is a useful educational resource for local schools and community organisations.	A44. Support education use of appropriate areas of the park by schools, community groups and visitors by providing information.
Information signs are placed appropriately within the landscape setting to orientate and inform visitors about important information.	A45. Review and implement the park's existing interpretation strategy in consultation with the local community and other stakeholders.
Visitors are able to enjoy and safely access park features. Visitor safety remains an important management consideration and this is reflected in visitor information.	A46. Continue to make visitors aware of the types of risks likely to be encountered in the park through adequate warnings on signs and pre-visit information.

## 4.6.2 Science

The park also provides plentiful opportunities for scientific research and monitoring programs. Major gaps in information include systematic wildlife surveys as well as ecological and life history data, particularly in relation to species of conservation significance.

Sites on Welford National Park are providing scientific benchmarks to study various plant communities in the absence of sheep and cattle grazing. These studies could help guide management of pastoral properties containing similar communities, as they provide reference information about the composition of native pastures in the absence of introduced stock. They also provide reference for the state of native pasture under varying environmental conditions (especially drought) and the extent to which the current scalding and pasture composition of the alluvial floodplains is due to natural phenomena, such as flooding, or due to overgrazing by introduced stock. The control sites may also be used to monitor macropod grazing in the absence of livestock.

Desired outcomes 2021	Actions and guidelines
Research and monitoring programs provide valuable information that guides the area's protection and use.	<p>A47. Encourage research into topics relevant to park management including, as a priority, information about species of conservation significance. This includes distribution, habitat requirements, effects from fire, and Indigenous cultural heritage values of the park.</p> <p>A48. Participate in research activities to share knowledge and skills (such as helping with native plant and wildlife surveys, and undertaking monitoring programs).</p> <p>A49. Encourage birdwatchers or similar groups to share information gathered in the park.</p>

## 4.7 Partnerships

Fourteen properties share a common boundary with Welford National Park. Fostering and maintaining open, positive and respectful relationships with neighbours and local communities is an important priority for QPWS. Plants, animals, fire, air and water move across and affect the landscape without regard for tenure boundaries, fence lines and shared management issues, and a cooperative relationship is fundamental to good park management operations.

The park is surrounded by grazing properties. Therefore, the entire park is fenced but regular maintenance is essential following annual flooding. Costs associated with maintaining and replacing boundary fencing are negotiated between the relevant landholders and QPWS.

QPWS participates in the 'Navarra' community baiting program to control wild dogs near the north-eastern section of the park. This practice will continue to help neighbours reduce stock losses. QPWS will support regional pest management initiatives and continue working with local councils, landholders and other stakeholders to manage pest plants and pest animals across the landscape.

An airstrip is maintained to Royal Flying Doctor Service standards on Welford National Park. QPWS participates in local Royal Flying Doctor Service awareness days for the community.

Desired outcomes 2021	Actions and guidelines
Good working relationships with Traditional Owners, neighbouring landholders, tourism organisations, natural resource management groups, other government agencies and research organisations are maintained.	<p>A50. Continue to participate, support and encourage strategic and holistic landscape management through partnerships with community groups, landholders, researchers, local government and other agencies, where appropriate.</p> <p>A51. Develop strategic partnerships with the regional tourism industry to ensure better coordination of visitor information and services.</p> <p>A52. Support and guide the activities of volunteer natural interest groups to ensure integration with QPWS monitoring programs.</p> <p>A53. Ensure the airstrip is maintained to Royal Flying Doctor Service standards.</p>
The local community continues to enjoy the park's social and economic benefits.	A54. Consider the park's important social and economic value to the local community in management decisions for the park.

## 4.8 Site-specific management

In the park's south-west section the Barcoo Shire Council currently has a gravel borrow pit on the Jundah–Quilpie Road where road material is removed to maintain roads in the local area and on the park. Such a resource is uncommon in the region, and of considerable value to the council. QPWS has established parameters for extracting quarry material on protected areas and this will provide specific guidance in negotiations with Barcoo Shire Council.

Desired outcomes 2021	Actions and guidelines
Extraction from the gravel quarry on the Jundah–Quilpie Road has minimal negative impacts on native plant and animal communities and scenic amenity.	<p>A55. In negotiation with Barcoo Shire Council, consider available options for future management arrangements at this site. Options may include re-gazettal as a resources reserve, a land swap or other agreement.</p> <p>A56. Negotiate with Barcoo Shire Council to reduce the existing quarry's impacts on the park's scenic amenity and visitor safety, including rehabilitating the site to an appropriate standard.</p>

## 5. Other key issues and responses

### 5.1 Pest management

Welford National Park has several pest plants occurring mostly on the floodplains, at disturbed areas next to roads, and camping and day-use areas. These species are spread by flood waters, wind, pest and native animals, vehicles, machinery and on clothing and footwear. Some pest plants found on Welford National Park are declared Class 2 pests under Queensland legislation and some are also weeds of national or regional significance. Control of many pest plant species will be difficult as annual flood waters replenish seeds, making integrated regional pest plant management with land managers the key to reducing pest plant abundance across the landscape. Pests are managed in accordance with a QPWS Level 2 Pest Management Strategy for the parks in the Cooper Catchment, which includes Welford National Park.

Buffel grass *Pennisetum ciliare* is of particular concern as it is deliberately propagated by neighbouring landholders to improve pastures and has the potential to spread rapidly through the park with wind, high rainfall and flooding, making incursions difficult to control. In the park, small patches of buffel grass exist along some creeks and sand plains. Buffel grass impacts are many and incursions can alter the vegetation structure, composition and associated ecosystem processes by competition. Also, the increased biomass enables higher fire intensity and frequency than occurs naturally.

Mesquite *Prosopis limensis* is found in low densities along the Barcoo River floodplain. It is a declared Class 2 species under the Land Protection (Pest and Stock Route Management) Act and control is required. The plant quickly invades uplands country, out-competing other native vegetation. Along with buffel grass, control of mesquite must be a priority, as these species have the ability to drastically affect natural systems, including habitat composition and structure, and hence alter wildlife populations (Porter, 2004).

Parkinsonia *Parkinsonia aculeata* grows into a large shrub or small tree and can form impenetrable thickets if left uncontrolled. Parkinsonia is also a Class 2 declared plant and a weed of national significance.

Noogoora burr *Xanthium pungens* still exists in relatively high densities in sandy soils along watercourses, and the seed spreads easily during floods. There is minimal control carried out upstream of the park as it does not impact on stock production. This species is not a declared plant and therefore is a low priority.

Crownbeard *Verbesina encelioides* and mexican poppy *Argemone ochroleuca* are also present in low densities. These species are not declared, but are weeds of regional significance.

Inaccessible range country, thick mulga forests, river channels and floodplains are all ideal havens for pest animals. Implementing strategic pest animal control programs to make efficient use of limited resources is vitally important to minimise the impacts, particularly on native wildlife, but also the environment in general.

Wild dogs *Canis familiaris* are common on the park, and are known to prey on small macropods. Little is known of the impact they may be having on yellow-footed rock-wallabies *Petrogale xanthopus celeris* and this requires further investigation. Sand plots for monitoring distribution and abundance of wild dogs have been established in sections of the park.

Cats *Felis catus* are widespread throughout the park, but prefer sheltered habitat in the mulga country. Foxes *Vulpes vulpes* are widespread at low densities across most of the park. As carnivorous scavengers and opportunistic predators, foxes have a seasonal abundance of prey available to them, including birds, insects, frogs, reptiles, rodents, rabbits, small marsupials and macropods. Foxes, along with wild dogs and cats, are likely to impact on yellow-footed rock-wallaby populations.

The park's entire boundary is fenced but neighbouring cattle occasionally stray onto the park, particularly after the Barcoo River floods. Maintaining fences after flooding is thus a priority. Owners remove cattle from the park under a mustering permit.

Pig *Sus scrofa* activity on Welford National Park is particularly evident throughout the southern section of the park, on the Barcoo River flood plains and around the lagoons. Pigs disperse when water is plentiful, making aerial shooting efforts more successful during drier periods. Aerial shooting efforts significantly reduce the population for a period, but pigs rapidly recover in the wet season, and consistent follow-up efforts are essential for long-term success of control programs.

Small herds of goats *Capra hircus* are scattered across the north-east section of the park in the mulga country, with occasional sightings on the remainder of the park. Overgrazing by goats hampers recovery of native herbs, grasses and shrubs. They can also compete with yellow-footed rock-wallaby populations for rock shelters and food, exposing the wallabies to predators. Any goats mustered on the park that are identified as domestic stock are returned to their owner or reported to the stock squad. Trapping is generally ineffective as alternative water sources are usually available. Goats found on the park without ear tags are considered wild.

Rabbits *Oryctolagus cuniculus* have been recorded, with numbers also fluctuating between seasons. Rabbits are an alternative food source for other pest animals, although they compete with native animals for food and burrow space and contribute to grazing pressure. As they are found in very low densities across the park, rabbits are not currently considered a major threat to any species known to exist on the park.

Desired outcomes 2021	Actions and guidelines
The integrity of native plant and animal communities is maintained, and the impacts of pest plants and animals on natural and cultural values is minimised through strategic, sustained management.	<p>A57. Manage pest plants and animals in accordance with the Management of Pests on QPWS-managed Areas — Operational Policy, including:</p> <ul style="list-style-type: none"> <li>• use the QPWS pest management system and ParkInfo to plan, manage, record and monitor all pests and pest management</li> <li>• participate cooperatively, where practical and appropriate, in pest management planning and implementation across the landscape with surrounding land managers, other government departments, local governments and utility providers to ensure landscape-level pest management is successful</li> <li>• follow all pest management principles outlined in the QPWS Good Neighbour Policy</li> <li>• ensure pest management does not adversely affect the natural integrity of the park and uses the best available scientific and technical knowledge.</li> </ul> <p>A58. Control small and new infestations of declared species and buffel grass as a matter of priority.</p>

Neighbouring stock does not stray onto the park.	<p>A59. Work with neighbours to ensure boundary fencing is maintained in good condition, particularly following floods.</p> <p>A60. Where stock stray onto the park, QPWS staff identify the ownership of the animals and have them removed within 10 days.</p>
--	---

## 5.2 Fire management

Fire has played a major role in shaping the Australian landscape. Fire, or its absence, plays a critical role in maintaining the conservation values of the park, making fire planning essential. Some vegetation communities, such as spinifex grasslands, require fire to maintain diversity. Species that comprise many vegetation communities, such as the spinifex sand plains, have been shaped by fire. Areas recently burnt have a higher proportion of ephemeral herbs and small patches of spinifex than areas that are not burnt for long periods, which have large patches of old spinifex rings with very few other species present (Addicott, 1998). Other land systems, such as herb fields, alluvial gidgee and alluvial sand plains, gibber or ironstone flats and hard mulga associations, have naturally low fuel loads and fire exclusion zones are generally not practical or necessary.

The overall natural resource objectives of managing fires on Welford National Park are to promote and maintain the current diversity of vegetation communities and habitat types and to encourage the recovery of Mitchell Grass Downs communities that have been degraded by grazing prior to acquisition. All plant communities should be allowed to take advantage of good seasons to replenish seed banks.

A fire strategy for the park was developed in 2003 to guide fire management, and aims to maintain the diversity of vegetation communities, help some communities recover, and protect life and cultural heritage values.

The park's road network provides additional firebreaks and access over much of the park. Historically, the risk of fire entering the park and subsequent damage from wildfires has been minimal as most areas of the park typically have a very low fuel load and contain large areas of rocky or bare substrate.

Other natural barriers, such as the Barcoo River, stream channels and waterholes, greatly reduce the risk of fire spreading throughout the park even if ignition occurs. While a few small wildfires have started from lightning strikes on the park since acquisition, none have caused serious damage. Indeed, they have contributed to the overall mosaic pattern of the spinifex sand plains.

Desired outcomes 2021	Actions and guidelines
Promote and maintain the current diversity of vegetation communities and habitat types and encourage the recovery of communities that have been degraded through pastoral management.	<p>A61. Continue to implement and periodically review the fire strategy and wildfire response procedures for the park.</p> <p>A62. Monitor the fire scars of previous burns to increase understanding of the ecological effects of fire on plant communities.</p> <p>A63. Coordinate fire management activities with landholders and local authorities.</p> <p>A64. Assess burn areas for buffel grass invasion and undertake control.</p>

## 5.3 Climate change

The floodplains and channel country characteristic of Welford National Park, within the central west Queensland region, are not immune to climate change challenges. Climate projections for the region suggest increasing temperatures and evaporation and a decline in rainfall. This will bring drought and likely changes to the intensity and frequency of extreme climatic events. Floodplains and aquatic ecosystems are dependent on river flows, making them highly vulnerable to climate change (Office of Climate Change, 2009).

Changes in these ecosystems may cause losses in native plant and wildlife populations and communities, displaced by more adaptable pest species. Wildlife dependent on waterholes to maintain populations may be threatened if flow regimes are altered (Office of Climate Change, 2009).

Although climate change is difficult to manage and is, for the most part, outside the scope of this plan, implementing appropriate pest management strategies to minimise other threats like predators, damaged habitats and pest plant invasions will give native communities the best chance of surviving the stress of climate change.

Desired outcomes 2021	Actions and guidelines
Fire-sensitive species and communities are not adversely impacted by hotter, drier conditions resulting from climate change.	A65. Protect fire-sensitive species and communities through implementing and reviewing appropriate fire strategies as outlined in section 5.2.
Threatening processes exacerbated by climate change are minimised through appropriate pro-active management practices.	A66. Implement actions in sections 4.1, 4.2, 5.1 and 5.2 to reduce the impacts of predation, destruction of habitats and the invasion of pest plant species.

## 6. References

Addicott. E 1998, Welford National Park Vegetation Report, Department of Environment and Resource Management, Brisbane.

Department of Environment and Resource Management and Department of Primary Industries and Fisheries, Cultural Heritage Review Group 2000, Cultural Heritage Profile: Ceremonial Sites: Earthen Rings and Stone Arrangements, Queensland.

Environmental Protection Agency 2003, Welford National Park Fire Management Strategy, Queensland Parks and Wildlife Service (Unpublished), Brisbane.

Environmental protection Agency 2008, Welford National Park: Drive Guide, State of Queensland, Brisbane.

Department of Environment and Resource Management (n.d) Entry in the Heritage Register, State Heritage Place, Queensland Government, Brisbane.

Department of Infrastructure and Planning 2009, *Central West Regional Plan*, Queensland Government, Queensland.

Desert Channels Queensland Incorporated 2004, *Protecting our Assets – A Natural Resource Management Plan for the Queensland Section of the Lake Eyre Basin (2004 – 2009)*, Desert Channels Queensland Incorporated

EDAW 2000, Longreach District National Parks, Visitor Management Strategy, Unpublished Report, QPWS, Brisbane.

Office of Climate Change (2009) Climate change in the Central West Queensland Region, viewed 16 December 2009 <[www.climatechange.qld.gov.au](http://www.climatechange.qld.gov.au)>

Pople. T. and Page. M 2001, *Management of Artificial Water Points on National Parks in Western Queensland*, University of Queensland, Brisbane.

Porter. G 2004, Welford National Park Fauna Survey Report, Queensland Parks and Wildlife Service, Rockhampton (Unpublished).

State of Queensland 1992, *Nature Conservation Act 1992*, Office of the Queensland Parliamentary Counsel, Brisbane.

State of Queensland, Environmental Protection Agency (EPA) 2001, *Master Plan for Queensland's Parks System*, State of Queensland, Brisbane.

Taylor M. and Figgis P. (eds) 2007, Protected Areas: Buffering nature against climatic change. Proceedings of a WWF and IUCN World Commission on Protected Areas symposium, 18-19 June 2007, Canberra. WWF Australia, Sydney.

## 7. Hyperlinks

Bonn Convention <[www.cms.int](http://www.cms.int)>

China–Australia Migratory Bird Agreement <[www.austlii.edu.au](http://www.austlii.edu.au)>

DERM website <[www.derm.qld.gov.au](http://www.derm.qld.gov.au)>

*Disaster Management Act 2003* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>

*Environment Protection and Biodiversity Conservation Act 1999* and Regulations 2000 <[www.environment.gov.au](http://www.environment.gov.au)>

*Environmental Protection Act 1994* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>

Japan–Australia Migratory Bird Agreement <[www.austlii.edu.au](http://www.austlii.edu.au)>

Key threatening process <[www.environment.gov.au](http://www.environment.gov.au)>

Landscape Classification System for Visitor Management <[www.derm.qld.gov.au](http://www.derm.qld.gov.au)>

*Nature Conservation Act 1992* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>

Nature Conservation (Protected Areas) Regulation 1994 <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>

Nature Conservation (Wildlife Management) Regulation 2006 <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>

Nature Conservation (Wildlife) Regulation 2006 <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>

QPWS Pest Management Plan: Areas managed by the Queensland Parks and Wildlife Service 2003–2008  
<[www.derm.qld.gov.au](http://www.derm.qld.gov.au)>

*Queensland Heritage Act 1992* <[www.legislation.qld.gov.au](http://www.legislation.qld.gov.au)>

Regional ecosystems <[www.derm.qld.gov.au](http://www.derm.qld.gov.au)>

## **8. Appendixes**

**Appendix A – Maps**

**Appendix B – Definitions**

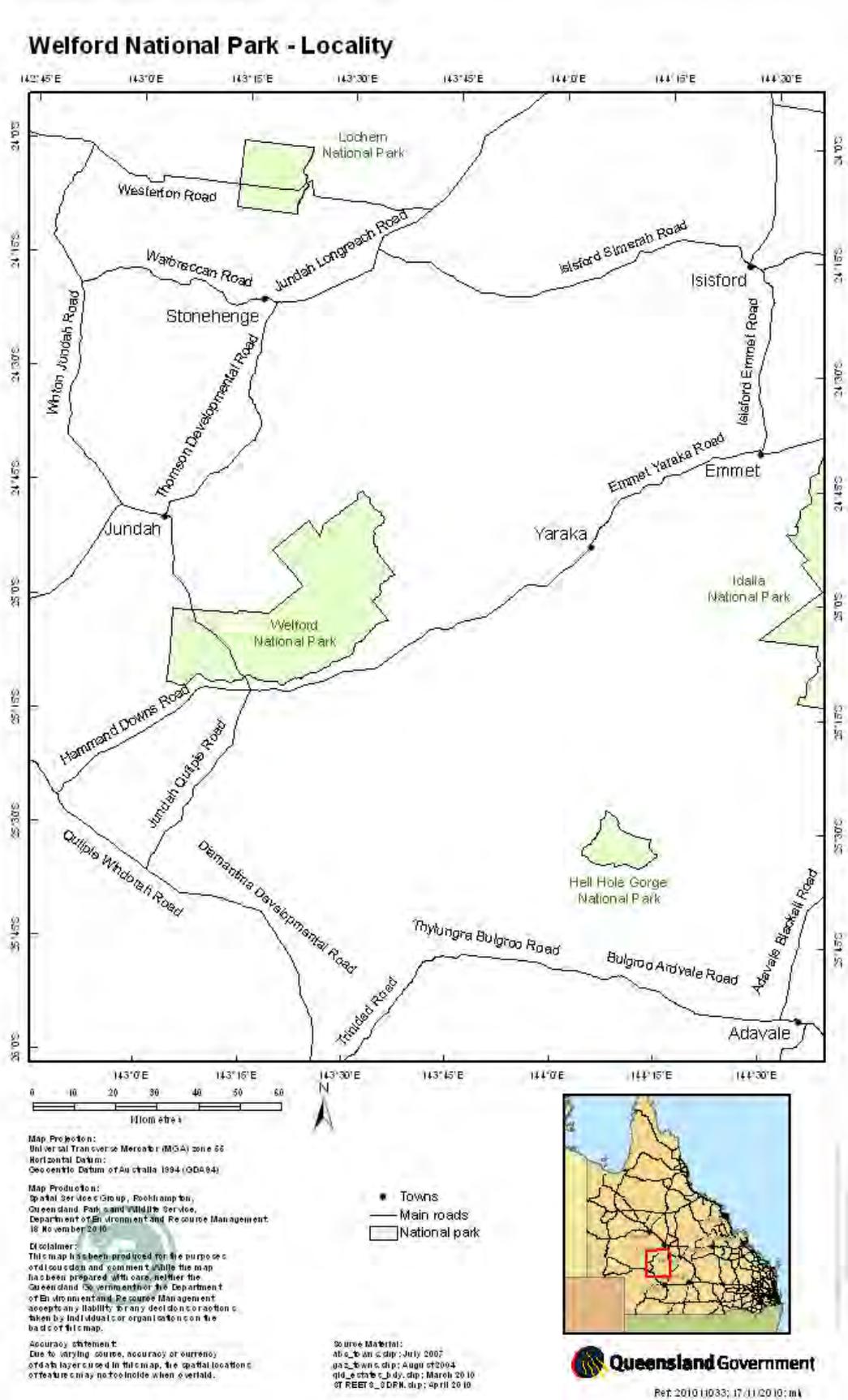
**Appendix C – Tables**

## **Appendix A – Maps**

**Map 1 Locality**

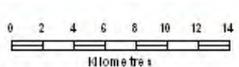
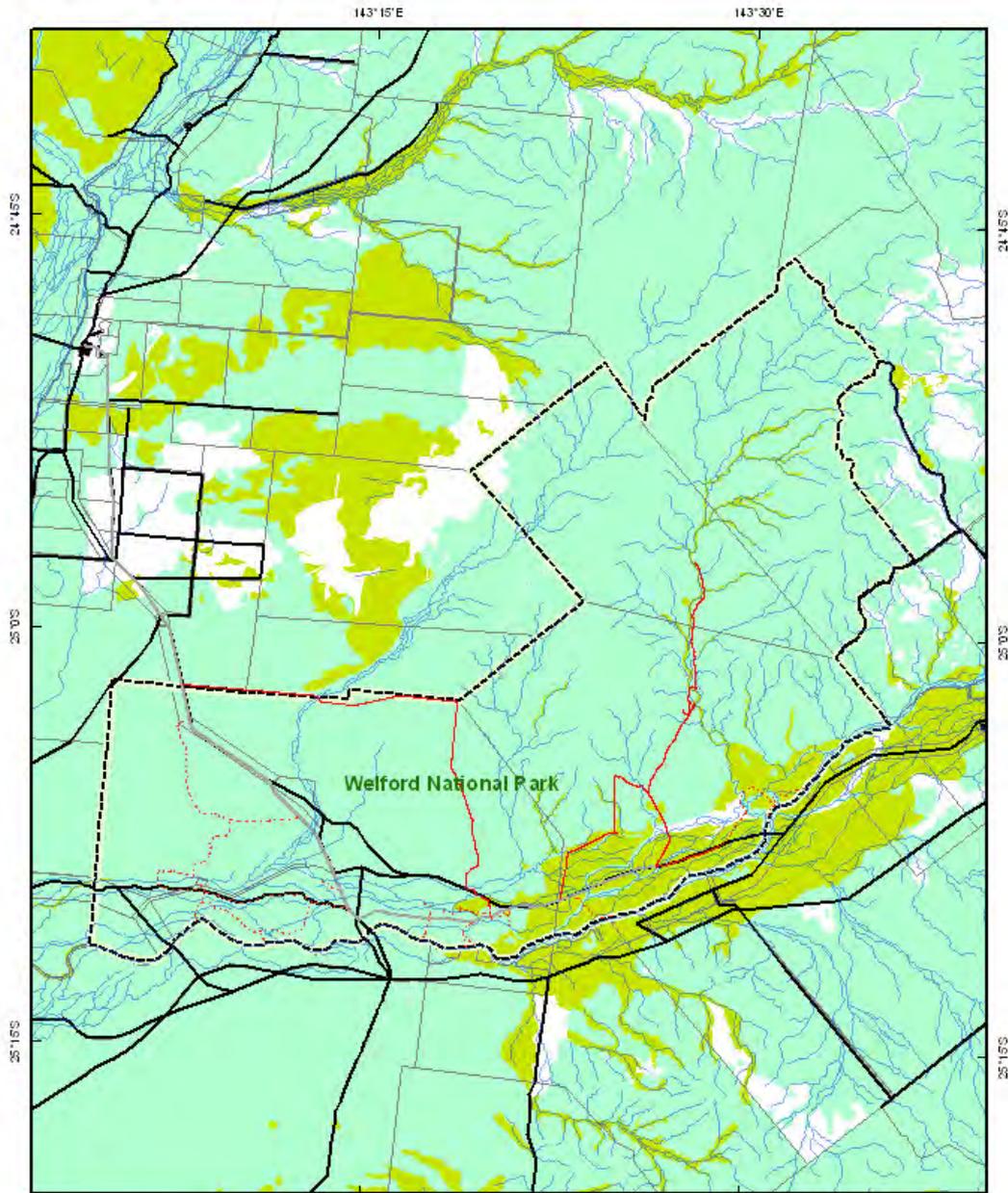
**Map 2 Regional ecosystems biodiversity status**

Map 1 – Locality



## Map 2 – Regional ecosystems biodiversity status

### Welford National Park - Regional Ecosystems Biodiversity Status



**Map Projection:**  
 Universal Transverse Mercator (MGA) zone 55  
**Horizontal Datum:**  
 Geocentric Datum of Australia 1994 (GDA94)

**Map Production:**  
 Spatial Services Group, Rockhampton,  
 Queensland Parks and Wildlife Service,  
 Department of Environment and Resource Management  
 18 November 2010

**Disclaimer:**  
 This map has been produced for the purpose of  
 information and comment. While the map  
 has been prepared with care, neither the  
 Queensland Government nor the Department  
 of Environment and Resource Management  
 accepts any liability for any decision or action  
 taken by individuals or organisations on the  
 basis of this map.

**Accuracy statement:**  
 Due to varying source, accuracy or currency  
 of data layers used in this map, the spatial locations  
 of features may not coincide when overlaid.

- Creeks
- Main roads
- QPWS roads**
- 2wd dry weather
- 4wd all weather
- 4wd dry weather
- Cadastral boundaries
- National park
- Biodiversity status**
- Of concern dominant
- Not of concern
- Non remnant

**Source Material:**  
 creek.s.dip; Aug 07 2004  
 dodb\_centralhighland.s.dip; March 20 10  
 qld\_catastr.s.dip; March 20 10  
 qpws\_po\_inf.s.dip; June 2008  
 qpws\_road.s.dip; June 2008  
 RES\_ECOSOU.s.dip; November 2009  
 STFEET0\_0DRN.s.dip; April 10 10



Ref: 201011033; 17/11/2010; ml

## Appendix B – Definitions

### Aboriginal cultural heritage

Aboriginal cultural heritage is anything that is:

- (a) a significant Aboriginal area in Queensland
- (b) a significant Aboriginal object; or
- (c) evidence, of archaeological or historic significance, of Aboriginal occupation of an area of Queensland.

### Capped bore

Water does not flow uncontrolled from a bore under its own pressure and flows through a pipe.

### Conservation significance

Native plant and animal species in the park which are listed under the Nature Conservation (Wildlife) Regulation 1994, species listed under JAMBA/CAMBA and other relevant legislation.

Cultural heritage

The values that people place on the landscape and their experience of it, including their knowledge and traditions, stories, songs, dances and relationships, as well as specific places, structures and objects.

### Ecologically sustainable use

Is:

- (a) in relation to wildlife—the taking or use of the wildlife; or
- (b) in relation to protected areas—the use of the areas within their capacity to sustain natural processes; while
- (c) maintaining the life support systems of nature
- (d) ensuring that the benefit of the use to present generations does not diminish the potential to meet the needs and aspirations of future generations.

### Management principles for national parks

Under section 17, Nature Conservation Act 1992:

- (1) A national park is to be managed to—
  - (a) provide, to the greatest possible extent, for the permanent preservation of the area's natural condition and the protection of the area's cultural resources and values
  - (b) present the area's cultural and natural resources and their values
  - (c) ensure that the only use of the area is nature-based and ecologically sustainable.
- (2) The management principle mentioned in subsection (1)(a) is the cardinal principle for the management of national parks.

### Management zones

Zones are smaller units in the national park, established in order to prescribe individual management regimes with each based on the conservation of natural and cultural values, on presentation values, or managing hazards and visitor safety in the area.

### Recreation settings

The combination of the biophysical, social and managerial attributes of a place in which recreation occurs. Some recreation settings are outdoor places and others are indoor or built places. Recreation settings may vary in character from very natural outdoor places at one extreme to indoor places, which are entirely built or developed. Naturalness can be expressed on a range from completely wild-natural to completely modified-built-developed, depending on the proportion of natural and human modified elements in the setting at any given time.

### Regional ecosystems

Regional ecosystems are communities of vegetation that are consistently associated with a particular combination of geology, land form and soil in a bioregion (after Sattler and Williams, 1999). The Queensland Herbarium, part of DERM, has mapped the remnant extent of regional ecosystems for much of the state using a combination of satellite imagery, aerial photography and on-ground studies. Each regional ecosystem has been assigned a Vegetation Management Act status and a DERM biodiversity status of 'endangered', 'of concern' or 'not of concern'.

## Visitor facility

Structures that support visitor use and safety, which reduce unintended impacts on natural resources. The term applies to structures or facilities that are built and maintained — tracks, toilets, camping areas, car parks, signs, roads, etc.

## Appendix C – Tables

**Table 1: Vulnerable, endangered or near threatened native animals and plants for Welford National Park.**

Family	Scientific name	Common name	Status under the Nature Conservation Act 1992	Status under the Environment Protection and Biodiversity Conservation Act 1999
Cacatuidae	<i>Lophochroa leadbeateri</i>	Major Mitchell's cockatoo	Vulnerable	–
Falconidae	<i>Falco hypoleucos</i>	Grey falcon	Near threatened	–
Muridae	<i>Pseudomys australis</i>	Plains rat	Endangered	Vulnerable
Scincidae	<i>Ctenotus capricorni</i>	–	Near threatened	–

**Table 2: Bird species listed in international agreements for Welford National Park.**

Family	Scientific name	Common name	BONN	JAMBA	ROKAMBA	CAMBA
Meropidae	<i>Merops ornatus</i>	Rainbow Bee-eater		✓		
Scolopacidae	<i>Tringa stagnatilis</i>	Marsh sandpiper	✓ A2H	✓	✓	✓
Threskiornithidae	<i>Plegadis falcinellus</i>	Glossy ibis	✓ A2S			✓

**Table 3: Site profiles.**

Site name	Site description	2010 Landscape Classification Setting (LCS)	Desired Landscape Classification Setting (LCS)
Little Boomerang camp ground	A camp ground in a natural setting adjacent to the Barcoo River on the River drive. No amenities currently provided. Self-registration station at the entrance to the campground.	3	3
Sawyer's Creek	An informal day-use area with lush riparian vegetation adjacent to Sawyer's lookout. The site has potential as a small bush camp site with no facilities.	2	2
Sawyer's lookout	An informal lookout on a moderately steep gradient offering panoramic views of the surrounding landscape.	2	2
The Jetty day-use area	An open, undeveloped day-use area adjacent to the Barcoo River with no facilities. The 'jetty' refers to a natural rock bar on the bank of the river. The day-use area provides a picnic area with two-wheel-drive access along the River drive.	2	2
Trafalgar camp ground	An undeveloped camp ground in a natural setting adjacent to the Barcoo River on the Mulga Drive.	3	2

**Table 4: Management of vehicle tracks.**

Track name	QPWS road class	2011 status	Desired status	Future management
Desert Drive	5C	Low traffic volume, narrow dry weather natural surface road, with soft sandy sections, open to four-wheel-drive vehicles.	Dry weather road open to four-wheel-drive vehicles.	Narrow dirt road with a natural surface; no intention to upgrade.
Mulga Drive	5C	Narrow dirt road, with a natural surface and rocky jump-ups in sections.	Dry weather road open to four-wheel-drive vehicles.	Close vehicle access to the top of Sawyer's lookout and investigate the practicality of extending the Mulga Drive into a loop road.  Investigate the feasibility of re-routing the Mulga Drive away from the homestead to incorporate the shearing shed and quarters, and reconnect with the drive on the western side of the homestead.
River Drive	5C	Dry weather road open to two-wheel-drive vehicles.	Dry weather road open to two-wheel-drive vehicles.	Dirt road with a natural surface; no intention to upgrade.

