IUCN Conservation Outlook Assessment 2014 **(archived)**
Finalised on 12 November 2014

Please note: this is an archived Conservation Outlook Assessment for Uluṟu-Kata Tjuṯa National Park. To access the most up-to-date Conservation Outlook Assessment for this site, please visit https://www.worldheritageoutlook.iucn.org.

Uluṟu-Kata Tjuṯa National Park

SITE INFORMATION

Country:
Australia
Inscribed in: 1994
Criteria:
(v) (vi) (vii) (viii)

Site description:

This park, formerly called Uluru (Ayers Rock – Mount Olga) National Park, features spectacular geological formations that dominate the vast red sandy plain of central Australia. Uluru, an immense monolith, and Kata Tjuta, the rock domes located west of Uluru, form part of the traditional belief system of one of the oldest human societies in the world. The traditional owners of Uluru-Kata Tjuta are the Anangu Aboriginal people. © UNESCO

SUMMARY

2014 Conservation Outlook

Good

The site’s World Heritage values are in good condition, likely to be maintained and indicators are that the protection and conservation of the site is improving together with visitor management, behaviour and respect for the site. The site is very well managed through a combination of traditional and scientific knowledge under a Board of Management comprising a majority Traditional Owners, the Director of National Parks and two experts. Park Management programs are all guided by Tjukurpa (Traditional Law). The key threats to the site: wildfire, feral animals (camels, fox and rabbits), weeds and invasive exotic species (especially buffel grass) and climate change are a threat to the sites’ biodiversity values rather than a threat to its World Heritage Values. These threats are all well recognized and prioritised in the Plan of Management.

Current state and trend of VALUES

Good
Trend: Stable

The site receives high levels of very appropriate and respectful care that is not only ensuring protection of the sites natural and cultural World Heritage values but significantly increasing the respect of the wider Australian and global community to better appreciate the site and its complex values. The site’s natural values – spectacular natural phenomenon of exceptional aesthetic and spiritual importance, as well as ongoing geological process – remain well preserved.

Overall THREATS

Very Low Threat

The site’s World Heritage values are not threatened. Erosion is a particular concern in some areas of the site but is well recognized in the Plan of

Management and strategies have been implemented. Most of the impacts on the site (wildfire, ferals, weeds and climate change) affect the ‘biodiversity values of the site and are prioritized in the current Management Plan (DoE, 2013; DoNP, 2010; Periodic Report, 2002).

Overall PROTECTION and MANAGEMENT

Highly Effective

Nguraritja / Anangu and Parks Australia share decision-making for the management of Uluru-Kata Tjuta National Park. The Management Plan 2010 – 2020 for Uluru-Kata Tjuta National Park and meets all the statutory requirements for a management plan under the Protection and Biodiversity Conservation Act 1999 (EPBC Act) through traditional practices. This association is supported and protected through the Board of Management, the Plan of Management, and other Park related plans, and plays an important/crucial role in the maintenance and protection of the World Heritage values.

FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ Spectacular natural phenomena

Criterion:(vii)

The Uluru-Kata Tjuta National Park, covers 1,325 km2 of arid ecosystems and is located close to the centre of Australia in the Western Desert, the traditional lands of Pitjantjatjara and Yankunytjatjara Aboriginal people (locally known as Anangu or Nguraritja). The Park includes the monoliths of Uluru and Kata Tjuta that are exceptional examples of tectonic, geochemical and geomorphic processes. (DoE, 2013) The park represents the work of Anangu and nature during thousands of years. Its landscape has been managed using traditional Anangu methods governed by Tjukurpa, Anangu Law (DoNP, 2010).

▶ Spectacular desert landscape

Criterion:(vii)

The remarkable and unique natural geological and landform features formed by the huge monoliths of Uluru and Kata Tjuta are set in a contrasting sand plain environment providing a landscape of exceptional natural beauty and scenic grandeur. The immense size and structural integrity of Uluru a red sandstone monolith 9.4 kilometres in circumference rising from the plain to a height of over 340 metres, is one of the largest monoliths in the world, starkly emphasised by its sheer, steep sides rising abruptly from the surrounding plain (DoE, 2013).

► Natural phenomena of exceptional aesthetic and spiritual importance

Criterion:(vii)

The relative simplicity of the monolith of Uluru and its contrasts with the many domes of Kata Tjuta; and the exceptional natural beauty of the view in which the contrasts and the scenic grandeur of the monoliths create a landscape of outstanding beauty. They are part of an important cultural landscape and have profound significance to Anangu, as well symbolic importance to European cultures (DoE, 2013; DoNP, 2010).

► Ongoing geological processes

Criterion:(viii)

Uluru is affected by erosional processes including sheeting of rock parallel to the surface and granular disintegration known as cavernous weathering. The monoliths of Uluru and Kata Tjuta are exceptional examples of tectonic, geochemical and geomorphic processes are associated with the inselbergs of Uluru and Kata Tjuta which result in the different composition of these two relatively close outcroppings, their different extent of block tilting and types of erosion, the spalling of the arkose sediments of Uluru and massive 'off loading' of conglomerate at Kata Tjuta (DoE, 2013; DoNP, 2010).

Other important biodiversity values

► An arid ecosystem

The landscape is dominated by spinifex and low shrubs, hummock grassland with large desert oaks dotted on the sand dunes and plains. Sizeable areas of mulga woodland and other low shrubs also occur on dunes and swales. The alluvial flow areas at the base of the major rock formations support large bloodwoods, acacias and native grasses. Water holes and soaks provide restricted habitats for a number of rare and unique plant species. Larger stands of mulga and other acacias dominate the harder, wide, sand plain surrounding Uluru and Kata Tjuta. The vegetation is modified by substrate stability, climate and fire arranged concentrically around the monolith formations (DoE, 2013).
The Uluru-Kata Tjuta landscape is a representative cross-section of Central

Australian arid ecosystems. Anangu and non-Aboriginal scientists distinguish the various landscapes in similar ways. Anangu recognise the main habitats of the park as puli (rocky country), puti (shrub lands, particularly the mulga flats between sandhills), karu (creek lines and run-off plains), tali (sand dunes), pila (spinifex plains,low areas between dunes); karu - creek beds and nyaru (recently burnt country) (DoNP, 2010).

► Rare and endangered species

Across the park's ecological zones 619 plant species have been recorded, among them seven rare or endangered species, which are generally restricted to the moist areas at the bases of Uluru and the domes of Kata Tjuta. These include five relict species – Stylidium inaequipealum, Parietaria debilis, Ophioglossum lusitanicum subsp. coriaceum, Isoetes muelleri and Triglochin calcitrapum. In addition, the main occurrence of the sandhill wattle Acacia ammobia is just east of Uluru. The park's flora represents a large portion of plants found in Central Australia (DoNP, 2010), many with a restricted range and therefore considered to have high conservation value. It is identified as a Site of Botanical Significance (White et al 2000).
The nationally vulnerable mulgara (Dasycercus cristicauda) and great desert skink (Egernia kintorei) occur in sand plains that are transitional between the mulga outwash around Uluru and Kata Tjuta and the dune fields beyond. An unusually diverse fauna assemblage occurs in an area extending north from Uluru, to the west of Yulara town-site and west to the Sedimentaries (DoNP, 2010).
Nine threatened species have been recorded: one plant (Quandong Santalum acuminatum) and eight vertebrate species. Significant populations of the nationally endangered Great Desert Skink Egernia kintorei, Brush tailed Mulgara Dasycercus blythi and itjaritjari or the Southern Marsupial Mole Notoryctes typhlops occur on the site. Australian Bustard Ardeotis australis, Emu Dromaius novaehollandiaei, Princess Parrot Polytelis alexandrae, Fawn Hopping-Mouse Notomys cervinus, Mala Lagorchestes hirsutus are also vulnerable or endangered species found on and surrounding the site (NRETAS, 2013).
Five threatened species have not been recorded in the site since 1970. Three other threatened species, the Black-footed Rock Wallaby Petrogale lateralis, the Common Brushtail Possum Trichosurus vulpecula and Sandhill Dunnart Sminthopsis psammophila, had been recorded since 1970 but are now

considered locally extinct (NRETAS, 2013).
The site supports a rich reptile fauna (74 species). These include species of 5 legless lizard, 11 geckoes, 8 dragons, 6 goannas, 29 skinks, 3 blind snakes, 2 pythons and 8 elapid snakes. This is richer than that recorded for any other area of comparable size in the semi-arid zone (DoNP, 2010). The park supports populations of a number of relict and endemic species associated withthe unique landforms and habitats of the monoliths. An undescribed and apparently relictual earthworm is known from the southern margin of Uluru. The camaenid land-snail Basedowena olgana is known only from Kata Tjuta and Mt Conner nearby. Relict species found in the park include the scorpion Cercophonius squama.

► **Other designations**

Eleven migratory species recorded from this site are listed under international conventions or bilateral agreements protecting migratory birds such as the Bonn Convention for conserving migratory species, and Australia’s migratory bird protection agreements with China (CAMBA), Japan (JAMBA) and Korea (ROKAMBA). The park is a Biosphere Reserve under the UNESCO Man and the Biosphere Programme. (DoNP, 2010; DoE, 2013; NRETAS, 2013).

Assessment information

Threats

Current Threats

Very Low Threat

The key threats to the site: fire, feral animals, weeds and invasive exotic species are a threat to the sites’ biodiversity values rather than a threat to its World Heritage Values. As noted, nine threatened species (1 plant and 8 vertebrate species) are recorded on the site. This includes significant populations of three of these threatened species. A further five threatened

species have not been recorded in the site since 1970. This is suggestive of the impacts of invasive and feral animal and weed species, together with the impacts of wildfire. However, the current threats to the site's World Heritage values are very low. Erosion is a major risk but is well recognized in the plan of management.

▶ Fire/ Fire Suppression

Low Threat
Inside site
Outside site

In the period 1997-2005, most parts of the site (99%) were burnt fewer than two times and no parts of the site were burnt more than four times. In 1976, wildfires burnt about 75% of the national park and large uncontrolled wildfires such as this are a significant threat to the conservation values of the site (NRETAS, 2013). Destructive wildfires burnt much of the park in 2002. The current plan of management acknowledges Traditional management practices carried out by Anangu as an integral part of 'caring for country'. Anangu use fire (patch burning) and other methods to manage their country; its habitats, plants and animals. Joint management of the park by them and Parks Australia, brings together cultural and scientific knowledge and experience (DoNP, 2010).

▶ Invasive Non-Native/ Alien Species

High Threat
Inside site
Outside site

Introduced red fox, cat, house mouse, European rabbit, feral dogs, compete with Indigenous species of fauna, and feral camels consume vast amounts of water and damage and pollute waterholes, and damage vegetation within the national park.
Buffel grass is an invasive weed species which is now widespread and has significant impact on conservation values. It chokes out native grasses, destroying habitat for native animals. It provides further fuel for wildfires. Other Category B weeds, khaki weed Alternanthera pungens; Mexican poppy Argemone ochroleuca; Mossman River grass Cenchrus echinatus; and caltrop Tribulus terrestris are recorded on the site. Couch grass Cynodon dactylon is likely to be spreading in the site (DoE, 2013; Freidel etal 2006; NRETAS,

2013).

▶ Dams/ Water Management or Use

Very Low Threat
Inside site

Water is being extracted from within the park ('the borefields') to supply the adjacent tourism resort and its associated infrastructure. Studies have suggested that the extraction rate is sustainable.

▶ Solid Waste

Low Threat
Inside site

The Aboriginal community of Mutitjulu which is entirely contained in the site and is adjacent to the Uluru monolith. The community has a population ranging from 150-300 people, sometimes more. The associated infrastructure within the park that enables this community to function includes a power station (diesel generators); a sewage farm; and a rubbish tip which might cause some pollution.

Potential Threats

Data Deficient

Impacts associated with visitor accommodation and staff quarters at Yulara village may be negatively affecting important faunal habitat in the Yulara borefields area. Because of the significance of this area to the supply of moisture and nutrients to the various significant species, this should be investigated as a potential threat.

▶ Tourism/ visitors/ recreation

Data Deficient
Inside site
Outside site

Some impacts associated with the Yulara village (main township and visitor accommodation) may be negatively affecting important faunal habitat in the Yulara borefields area (NRETAS, 2013).

▶ Erosion and Siltation/ Deposition

Low Threat
Inside site

Major surface features of the Uluru monolith include sheet erosion with layers 1 – 3 m thick, parallel to the existing surface, breaking away. A number of caves, inlets and overhangs at the base are formed by chemical degradation and sand blast erosion (DoE, 2013).
Erosion is a particular concern in some of these areas. Vehicle use by early visitors around the base of Uluru resulted in severe gully erosion. In addition, the Uluru Ring Road was built above the natural ground level in places, which has significantly altered the sheet flow and caused significant erosion. Soil susceptibility to erosion is a major risk and must be carefully considered in planning, designing and maintaining park infrastructure. Soils of the Gillen land system based around Uluru and Kata Tjuta are the most susceptible to erosion in the park where tourism pressures are greatest (DoNP, 2010).

Protection and management

Assessing Protection and Management

▶ Relationships with local people

Highly Effective

Joint management is being practiced through the implementation of lease provisions, with the park leased by the Federal Government from the Traditional Owners. Positive, harmonious relationships. Traditional Owners and boards of management are increasingly satisfied with park management. (DoNP, 2010)

▶ Legal framework and enforcement

Highly Effective

The Management Plan 2010 – 2020 for Uluru-Kata Tjuta National Park has been prepared under provisions of the Environment Protection and Biodiversity Conservation Act 1999 (DoNP, 2010)

► Integration into regional and national planning systems

Highly Effective

The Park is managed in accord to prescriptions contained in the Management Plan and in accord with State and Federal legislative obligations including those specific to World Heritage sites, Parks Australia policy and planning and legislative, systems. The Park makes a significant contribution to the National Reserve System, which aims to contain samples of all regional ecosystems across Australia, their constituent biota and associated conservation values, in accordance with the Interim Biogeographic Regionalisation for Australia. The park also contributes to the objectives of the National Strategy for the Conservation of Australia's Biological Diversity by conserving biological diversity in situ, integrating biological diversity conservation and natural resource management, managing threatening processes, improving knowledge of biological diversity and involving the community in biodiversity conservation.
Numerous migratory species that occur in Uluru–Kata Tjuta National Park are protected under international agreements such as the Bonn Convention for conserving migratory species, and Australia's migratory bird protection agreements with China (CAMBA), Japan (JAMBA) and Korea (ROKAMBA) (DoNP, 2010).

► Management system

Highly Effective

Joint management between the Traditional Owners, Nguraritja/ Anangu and Parks Australia brings together cultural and scientific knowledge and experience, as well as providing opportunities for formal western style education, employment and community development (DoNP, 2010).

► Management effectiveness

Highly Effective

The values of the site have been well preserved. Populations of EPBC Act listed threatened species and their habitats have been conserved (DoNP, 2010).

▶ Implementation of Committee decisions and recommendations

Highly Effective

No recent Committee Decisions.

▶ Boundaries

Highly Effective

The management plan identifies zoning that provides for biodiversity conservation in the reserve, the landscape and the needs of the Anangu community, the Central Land Council and Uluru–Kata Tjuta Land Trust in accordance with the Lease Agreement (DoE, 2013; DoNP, 2010).

▶ Sustainable finance

Highly Effective

Planning and financial decision-making are based on best available information, good practice and Government requirements. High levels of staff expertise and performance are maintained (DoNP, 2010). Attempts are being made to increase levels of employment of Anangu in Park Management roles as well as private enterprises to ensure the Anangu community has a sustainable and healthy future. Given the very remote location costs for effective park management are very high. Visitation is an important source of income.

▶ Staff training and development

Highly Effective

Growing capacity and increasing participation of Traditional owners in park management is a key goal of the Board of Management. Anangu rangers have graduated from the Batchelor Institute of Indigenous Tertiary Education, NT (DoE, 2013).

▶ Sustainable use

Highly Effective

In accordance with the Plan of Management stakeholders, neighbours, state agencies and park user groups – visitors and tourism operators - are involved in, and contribute to park management activities. This includes threatened

species monitoring activities carried out by the leaseholder of the resort at Yulara to ensure park visitors and staff are not impacting on the Yulara borefields (DoNP, 2010; NRETAS, 2013).

► Education and interpretation programs

Highly Effective

The Cultural Centre is the primary opportunity for increasing visitor awareness of living cultural traditions and the natural and cultural values of the Park. It is also the base for numerous Anangu enterprises to service visitor needs for tours, arts and craft and refreshments. A 'Knowledge for Tour Guides' program has been introduced, to improve tour guides' knowledge of Anangu culture, and natural heritage of the park. Public awareness and appreciation of the values of Park has been enhanced. Commercial operators provide a high quality service to park visitors. Plans are in place to upgrade the Cultural Centre and the affiliated enterprises (DoNP, 2010b).

► Tourism and interpretation

Mostly Effective

Anangu and non-Aboriginal people perceive Uluru-Kata Tjuta National Park in very different ways. Over 350 000 people visit the park every year to experience the spectacular scenery and learn about Anangu culture. Many people regard the Uluru monolith as one of the natural wonders of the world. For non-Aboriginal Australians, Uluru is the symbolic heart of the nation and is socially important for its recreational and aesthetic qualities. Visitor impacts (on reserve management, values, the environment and other visitors) are within acceptable levels. Although already actively involved and encouraged/supported by the Park to do as much as possible, Anangu people would like to be more involved in tourism businesses and interpretation delivery. They would also like to prevent visitors climbing Uluru as both a disrespectful and unsafe activity. Policies and regulations in relation to visitor management have been developed in such a way as to emphasise Anangu perceptions of appropriate visitor behaviour. Of particular importance are policies and guidelines developed by the Board of Management for commercial filming and photography and the closing off of certain areas around the base of Uluru, to ensure visitors do not inadvertently contravene

Tjukurpa restrictions.
The Cultural Centre has greatly increased opportunities for visitors to learn about Tjukurpa, Anangu culture and the park. Within the bounds of appropriate access, Tjukurpa provides a basis for most of the interpretation of the park to visitors. Anangu want visitors to understand how they interpret this landscape. Tjukurpa contains information about the landscape features, the ecology, the plants and animals, and appropriate use of areas of the park. Tjukurpa has been passed down through the generations and can be shared with visitors. In addition, Anangu believe that visitors' understanding of the park can be enhanced by providing information about how Anangu use the park's resources and the history of their use of these resources (DoNP, 2010).

► Monitoring

Highly Effective

Effective research and monitoring provides essential information to assist the Director and the Board, and the Australian Government, to make sound decisions about management of the park. This work may be carried out by park staff or consultants engaged by the Director. It may also be carried out in collaboration with other government agencies, organisations and individuals, including researchers and tourism businesses using/on the site.
The results of research and surveys in the park provide valuable information about natural and cultural resources and visitors' use of the park. Regular monitoring reveals whether and how conditions have changed in relation to the baseline information and helps in assessing the effectiveness of management programs and making better management decisions.
Flora and fauna monitoring in the park provides useful information for regional conservation programs, local Aboriginal enterprises, and the tourism industry. The episodic fluctuations in the abundance and distribution of many animals and their habitats mean that long-term monitoring programs are essential to identify trends (DoNP, 2010).

► Research

Highly Effective

Research is routinely undertaken by Anangu, Park staff and other research partners (such as University researchers) leading to a better understanding

of the park's biodiversity and natural and cultural heritage values, and the pressures these are under from a variety of sources; a better understanding of visitors: who they are, their expectations and awareness of the park, levels of satisfaction, and preferences and use of the park. The Board and Park management continuously seek to more effectively involve Anangu and traditional skills and knowledge to contribute to effective management of the park and the region and protect park values (DoNP, 2010; McAlpin 2006).

Overall assessment of protection and management

Highly Effective

Nguraritja / Anangu and Parks Australia share decision-making for the management of Uluru-Kata Tjuta National Park. The Management Plan 2010 – 2020 for Uluru-Kata Tjuta National Park and meets all the statutory requirements for a management plan under the Protection and Biodiversity Conservation Act 1999 (EPBC Act) through traditional practices. This association is supported and protected through the Board of Management, the Plan of Management, and other Park related plans, and plays an important/crucial role in the maintenance and protection of the World Heritage values.

► Assessment of the effectiveness of protection and management in addressing threats outside the site

Highly Effective

The current focus of management remains on expanding programs for the effective management of fire, feral animals, weeds and invasive plants, in particular buffel grass, the impacts of climate change and visitor management issues. In addition to the site specific Plan of Management, there are numerous programmes and national recovery plans relevant to particular threatened species and other management issues such as the Australian Weeds Strategy, Threat Abatement Plan for Predation by Feral Cats, Threat Abatement Plan for Predation by European Red Fox, Threat Abatement Plan for Competition by Feral Rabbits. Across the Northern Territory fire is mapped continuously under the North Australia Fire Information Project. Data from all these programs are integrated into site management, research and monitoring programs (NRETAS, 2013).

► Best practice examples

Anangu have lived in and maintained the landscape and Tjukurpa (Traditional law) at Uluru and Kata Tjuta for many thousands of years. Uluru-Kata Tjuta was first declared a national park under Commonwealth law on 24 May 1977, the Australian Government handed the deeds to the park back to its Anangu traditional owners on 26 October 1985. Anangu then leased the Park to the Director of Parks Australia, to be jointly managed under a board made up of a majority of traditional owners. Joint management combines traditional and scientific knowledge, different governance processes, and interweaves two law systems - Piranpa (European) law and Tjukurpa. Working together means learning from each other, respecting each other's cultures and finding innovative ways to bring together different ways of seeing and interpreting the landscape and its people. Anangu's traditional ecological knowledge is critical to the ongoing scientific management of the species found in these habitats. Traditional management practices carried out by Anangu are an integral part of ‘caring for country’. Anangu learned how to patch burn the country from Tjukurpa of lungkata, the blue tongued lizard. Now, in conjunction with modern methods, the cool season practice of lighting small fires close together leaves burnt and unburnt areas in a pattern like a mosaic. This traditional knowledge has been retained despite European colonists’ discouraging deliberate burning. Non-Aboriginal people now recognise that traditional Aboriginal burning is important to the ecology of habitats, with recently burnt areas being favoured by nomadic birds, small mammals and reptiles. Patch burning helps to maintain a mosaic of habitats at different stages of succession that are suitable for a range of plant and animal species. Burning in the park is carried out in accordance with traditional practices. This traditional knowledge is adopted as a major ecological management tool in the park. Anangu use fire and other methods to manage their country;its habitats, plants and animals. Tjukurpa also teaches about the location and care of rock holes and other water sources (DoE, 2013).
The mala (rufous-hare wallaby Lagorchestes hirsutus) is a small and critically endangered wallaby, no longer found in the wild. It is a significant Tjukurpa species and has recently been re-introduced (DoE, 2013). This small wallaby was once one of the most abundant and widespread macropods in the Northern Territory, inhabiting the spinifex country throughout Central

Australia. Today mala are classified by the Northern Territory Government as extinct in the wild, wiped out by European settlement which changed the environment in many ways, including farming practices, clearing, fire regimes and the introduction of feral predators such as cats and foxes. The species survives in a few feral-proof enclosures scattered around different parts of the continent and some islands off the West Australian coast. The mala enclosure at Uluru-Kata Tjuta covers 170 hectares and is surrounded by a cat and fox proof fence. Inside, the mala live a fairly natural life apart from the provision of supplementary food that they can use in the drier times. The mala enclosure was constructed in 2005, introducing 25 animals. Today there are more than 220 mala. The original mala were reared in Watarrka National Park. (Gillen etal 2000) Park management is now considering reintroducing more regionally extinct species such as the Burrowing Bettong, Black-footed Rock Wallaby and Ghost Bat (NRETAS, 2013).

State and trend of values

Assessing the current state and trend of values

World Heritage values

► **Spectacular natural phenomena**

Good
Trend:Stable

Anangu have lived in and maintained the landscape and Tjukurpa at Uluru and Kata Tjuta for many thousands of years. For the Indigenous community it has profound cultural significance. Many people regard the Uluru monolith as one of the natural wonders of the world. For non-Aboriginal Australians, Uluru is the symbolic heart of the nation and is socially important for its recreational and aesthetic values. The work of the Traditional Owners together with Parks Australia is improving the sites values by addressing previous negative behaviours introduced by Europeans which were damaging the ecological and cultural integrity of the site. This included climbing on the surface of Uluru, driving around its base and swimming in water holes (DoE, 2013; DoNP, 2010; Periodic Report, 2002).

► Spectacular desert landscape

Good
Trend:Stable

The park receives more than 350,000 visitors a year. Because of the numbers of visitors and the park's remoteness maintaining park infrastructure like shelters, toilets and water supply is an ongoing challenge. The infrastructure has been designed in keeping with the environment – both natural and cultural. It provides for visitors –both in tour buses and private vehicles without detracting from or damaging the aesthetics or fragility of desert landscape. Over the past decade very significant improvements have been made to infrastructure, visitor and tour operator behavior as well as site research and monitoring of impacts (DoE, 2013; DoNP, 2010; Periodic Report, 2002).

► Natural phenomena of exceptional aesthetic and spiritual importance

Good
Trend:Stable

Anangu are now working together with park rangers and scientists to look after the natural heritage according to traditional law, and Piranpa (non-Anangu) rangers are receiving training in traditional land management. Hence the values of the site are far more respected than previously. Piranpa rangers bring scientific knowledge to the Traditional Owners who are undertaking formal training to be rangers, studying science as well as learning from the old men and women. In 2011 the Indigenous Land Corporation purchased Ayers Rock Resort, located at Yulara inside the Park, paving the way for significant increases in Indigenous business interests in the nearby communities. This will enhance the visitor experience and appreciation of the site as a profoundly significant Indigenous place (DoE, 2013; DoNP, 2010; Periodic Report, 2002).

► Ongoing geological processes

Low Concern
Trend:Improving

Uluru is affected by erosional processes including sheeting of rock parallel to the surface and granular disintegration known as cavernous weathering. The

monoliths of Uluru and Kata Tjuta are exceptional examples of tectonic, geochemical and geomorphic processes. Therefore changes over time continue to occur. The improvements to site and visitor management in particular closing the climbing of Uluru has improved the integrity and safety of the site. Erosion is a particular concern in some areas but is well recognized in the Plan of Management and improvements have been implemented. Vehicle use by early visitors around the base of Uluru resulted in severe gully erosion. Soils of the Gillen land system based around Uluru and Kata Tjuta are the most susceptible to erosion in the park where tourism pressures are greatest. Soil susceptibility to erosion is a major risk and is carefully considered in planning, designing and maintaining park infrastructure (DoE, 2013; DoNP, 2010).

Other important biodiversity values

► An arid ecosystem

The landscape is dominated by spinifex and low shrubs, hummock grassland with large desert oaks dotted on the sand dunes and plains. Sizeable areas of mulga woodland and other low shrubs also occur on dunes and swales. The alluvial flow areas at the base of the major rock formations support large bloodwoods, acacias and native grasses. Water holes and soaks provide restricted habitats for a number of rare and unique plant species. Larger stands of mulga and other acacias dominate the harder, wide, sand plain surrounding Uluru and Kata Tjuta. The vegetation is modified by substrate stability, climate and fire arranged concentrically around the monolith formations (DoE, 2013).
The Uluru-Kata Tjuta landscape is a representative cross-section of Central Australian arid ecosystems. Anangu and non-Aboriginal scientists distinguish the various landscapes in similar ways. Anangu recognise the main habitats of the park as puli (rocky country), puti (shrub lands, particularly the mulga flats between sandhills), karu (creek lines and run-off plains), tali (sand dunes), pila (spinifex plains,low areas between dunes); karu - creek beds and nyaru (recently burnt country) (DoNP, 2010).

► Rare and endangered species

Across the park’s ecological zones 619 plant species have been recorded,

among them seven rare or endangered species, which are generally restricted to the moist areas at the bases of Uluru and the domes of Kata Tjuta. These include five relict species – Stylidium inaequipealum, Parietaria debilis, Ophioglossum lusitanicum subsp. coriaceum, Isoetes muelleri and Triglochin calcitrapum. In addition, the main occurrence of the sandhill wattle Acacia ammobia is just east of Uluru. The park's flora represents a large portion of plants found in Central Australia (DoNP, 2010), many with a restricted range and therefore considered to have high conservation value. It is identified as a Site of Botanical Significance (White et al 2000).

The nationally vulnerable mulgara (Dasycercus cristicauda) and great desert skink (Egernia kintorei) occur in sand plains that are transitional between the mulga outwash around Uluru and Kata Tjuta and the dune fields beyond. An unusually diverse fauna assemblage occurs in an area extending north from Uluru, to the west of Yulara town-site and west to the Sedimentaries (DoNP, 2010).

Nine threatened species have been recorded: one plant (Quandong Santalum acuminatum) and eight vertebrate species. Significant populations of the nationally endangered Great Desert Skink Egernia kintorei, Brush tailed Mulgara Dasycercus blythi and itjaritjari or the Southern Marsupial Mole Notoryctes typhlops occur on the site. Australian Bustard Ardeotis australis, Emu Dromaius novaehollandiaei, Princess Parrot Polytelis alexandrae, Fawn Hopping-Mouse Notomys cervinus, Mala Lagorchestes hirsutus are also vulnerable or endangered species found on and surrounding the site (NRETAS, 2013).

Five threatened species have not been recorded in the site since 1970. Three other threatened species, the Black-footed Rock Wallaby Petrogale lateralis, the Common Brushtail Possum Trichosurus vulpecula and Sandhill Dunnart Sminthopsis psammophila, had been recorded since 1970 but are now considered locally extinct (NRETAS, 2013).

The site supports a rich reptile fauna (74 species). These include species of 5 legless lizard, 11 geckoes, 8 dragons, 6 goannas, 29 skinks, 3 blind snakes, 2 pythons and 8 elapid snakes. This is richer than that recorded for any other area of comparable size in the semi-arid zone (DoNP, 2010). The park supports populations of a number of relict and endemic species associated withthe unique landforms and habitats of the monoliths. An undescribed and apparently relictual earthworm is known from the southern margin of Uluru. The camaenid land-snail Basedowena olgana is known only from Kata Tjuta

and Mt Conner nearby. Relict species found in the park include the scorpion Cercophonius squama.

► Other designations

Eleven migratory species recorded from this site are listed under international conventions or bilateral agreements protecting migratory birds such as the Bonn Convention for conserving migratory species, and Australia's migratory bird protection agreements with China (CAMBA), Japan (JAMBA) and Korea (ROKAMBA). The park is a Biosphere Reserve under the UNESCO Man and the Biosphere Programme. (DoNP, 2010; DoE, 2013; NRETAS, 2013).

Summary of the Values

► Assessment of the current state and trend of World Heritage values

Good

Trend: Stable

The site receives high levels of very appropriate and respectful care that is not only ensuring protection of the sites natural and cultural World Heritage values but significantly increasing the respect of the wider Australian and global community to better appreciate the site and its complex values. The site's natural values – spectacular natural phenomenon of exceptional aesthetic and spiritual importance, as well as ongoing geological process – remain well preserved.

► Assessment of the current state and trend of other important biodiversity values

Low Concern

Trend: Stable

The key issues for the site: wildfire, feral animals, weeds and invasive exotic species and climate change are a threat to the sites' 'Other Important Biodiversity Values' rather than a threat to its World Heritage Values. As noted, nine threatened species are recorded on the site. This includes significant populations of three of these threatened species. A further five threatened species have not been recorded in the site since 1970. This is

suggestive of the impacts of invasive and feral animals and weed species, together with the impacts of wildfire. These threats are all interrelated and together with climate change impact significantly on available ground water, which is a key determinant to the survival of the threatened species. The site supports an exceptional reptile fauna (74 species), many plant species with a restricted range and eleven migratory species. It is therefore considered to have high conservation value and botanical significance. These threats are all well recognized and prioritised in the Plan of Management.

Additional information

Key conservation issues

▶ Climate change

Global

The predicted effects of climate change for the central Australia region include a rise in average temperatures, a reduction in the number of cold nights (below 0 degrees Celsius) and an increase in evaporation rates. There is no projected change to annual average rainfall, there is a marginal increase in the occurrence of hot days and rain events.
The key threats to central Australia are an increased in annual temperatures, increase in CO2 concentrations, increase in potential evaporation, increase in the number of hot days over 35 degrees Celsius and a change in fire regimes.
In 2012 Uluru-Kata Tjuta National Park released its climate change strategy for 2012-2017. The park has identified a series of management actions in its climate change strategy to minimise the associated risks and impacts (DoE, 2013).

▶ Ground water

Local

Located in a vast desert region, ground water management is a key issue. Rainfall in the arid zone is low, highly unpredictable and highly variable both in amount and where it falls. The average annual rainfall for the region is 200–300 millimetres but this varies greatly. Major rainfalls are rare and very

important, hydrologically and ecologically, in recharging groundwater systems and driving the cycles of the desert ecosystems. Disruption to flows can have adverse effects on soils and vegetation. Groundwater is the only reliable water supply in the region. There are two main aquifer systems in the park: the Dune Plains Aquifer, from which Yulara draws its water supply via a bore under licence from the Northern Territory Controller of Water; and the Southern Aquifer, on which the Mutitjulu Community, Park Headquarters and the Cultural /visitor Centre depend. The capacity and levels of use of both aquifers have been reviewed. Water use within the park was considered to be sustainable based on projected growth of the Mutitjulu Community and on historical rainfall annual averages. Long-term water use at Yulara, based on historical use and rainfall averages, was less certain and further investigation have been recommended, particularly with more recent climate change predictions (DoNP, 2010; Hyde, 2008).
Feral animals particularly camels pose a particular threat, consuming vast quantities, polluting and damaging water holes essential to the survival of native fauna. The large number of visitors require drinking, washing and water for toilets also poses a challenge. Because of the significance of the Yulara borefields area to the supply of moisture and nutrients to the various significant species, the impact of visitor and service provider accommodation deserves investigation as a potential threat to available water to native flora and fauna. The sale of the resort to the Land Council may enable changes in water management practices and monitoring. Traditional methods of protecting temporary water resources include cleaning and protecting soaks and rock holes (DoNP, 2010)

► Visitor impact

Local

The park receives more than 350,000 visitors a year. Because of the numbers of visitors and the park’s remoteness maintaining park infrastructure like shelters, toilets and water supply is an ongoing challenge. There are also concerns about the impact of the accommodation area of Yulara, which houses Park and resort staff together with service providers like Police, teachers, shops, tour companies in houses and visitors in campsites, on-site tents, cabins, hotel and resort accommodation. The Yulara village site is located on the Yulara borefields drainage system and may be negatively affecting important faunal habitat in the area, as well as drawing heavily on water

resources.

▶ Erosion

Local

Erosion is a particular concern in some areas in the park but is well recognized in the Plan of Management and improvements have been implemented. Vehicle use by early visitors around the base of Uluru resulted in severe gully erosion. Soil susceptibility to erosion is a major risk and is carefully considered in planning, designing and maintaining park infrastructure and weed management. Soils of the Gillen land system based around Uluru and Kata Tjuta are the most susceptible to erosion in the park where tourism pressures are greatest (DoE, 2013; DoNP, 2010).

▶ Invasive weeds

Local

By far the most invasive weed in the park is buffel grass, a perennial tussock grass native to Africa, India and Asia. It was first introduced to the deserts of Australia in the 1870s, for erosion control pastoral purposes, and has since spread widely across most land types. Its seeds are readily spread by wind, water, cattle or camels and machinery. It chokes out native grasses, destroying habitat for native animals. It provides further fuel for wildfires in areas not previously burnt, especially in mulga shrublands (DoE, 2013).

▶ Feral animals

Local

A significant amount of park staff time and resources are committed to minimise feral camels, cats, rabbits and foxes. Research estimates there may be as many as one million feral camels in central Australia, with an estimated economic cost of $10 million per year. At Uluru, camels do significant damage to waterholes and soaks. Camels make the most of scarce water, with a thirsty camel drinking up to 200 litres of water in three minutes. By polluting and draining waterholes, camels pose a significant threat to the people, plants and native animals of Uluru.
Rabbits and camels are herbivores, eating the grasses and other vegetation which holds soil together. Bare soil leads to wind and water erosion. Rabbits also eat the roots and sapling trees and shrubs. Camels are regarded as one of the main causes of the reduction of the desert quandong plant species, an

important endemic bush food.
Foxes and cats are carnivores, hunting smaller animals, with a devastating impact on native mammals in the park (DoE, 2013).

▶ Fire

Local

Burning in the park is carried out in accordance with traditional practices. Burning is an important part of park management - many of the plants rely on fire to regenerate. Non-Aboriginal people now recognise that traditional Aboriginal burning is important to the ecology of habitats, with recently burnt areas being favoured by nomadic birds, small mammals and reptiles. Patch burning helps to maintain a mosaic of habitats at different stages of succession that are suitable for a range of plant and animal species. Burning also reduces fuel loads, preventing the risk of large wildfires (DoNP, 2010). There are two main vegetation groups in the park, one dominated by spinifex and one by mulga. The highest fire danger occurs after a few years without fire, giving spinifex the chance to build up and growth of grasses in mulga shrublands has peaked following heavy rain. If these two factors collide, uncontrolled wildfires will carry long distances through both types of vegetation, devastating plants and wildlife.
To avoid wildlife, spinifex (tjanpi) and mulga (wanari) dominated landscapes are managed quite differently (DoE, 2013). Reduction of buffel grass is also important in reducing fuel load.

Benefits

Understanding Benefits

▶ Wilderness and iconic features

Uluru–Kata Tjuta National Park is on the traditional lands of the Pitjantjatjara and Yankunytjatjara Aboriginal people (known locally as Anangu). It is part of an extensive Aboriginal cultural landscape that stretches across the Australian continent. The site represents the combined works of ancestral edlers and nature over millennia. The landscape has been continuously and sustainably managed using traditional Anangu methods governed by Tjukurpa (Traditional Law). The Anangu have obligations to maintain

Tjukurpa and want to ensure that these obligations and cultural traditions continue to be recognized (DoNP, 2010).

► Is the protected area valued for its nature conservation?

The Uluru–Kata Tjuta landscape is a representative cross-section of the Central Australian arid ecosystems. The main ecological zones in the site are:
puli – rock faces and vegetated hill slopes
puti – woodlands, particularly the mulga flats between sandhills
tali and pila – sand dunes and sandplains
karu – creek beds.
The site has a particularly rich and diverse suite of arid environment species of flora and fauna, most of which are unique to Australia. The site supports populations of a number of relict and endemic species associated with the unique landforms and habitats of the monoliths.
619 plant species have been recorded, among them seven rare or endangered species, including five relict species. A total of 26 native mammal species, including several species of small marsupials and native rodents and bats, and includes the recently reintroduced mala (rufous-hare wallaby Lagorchestes hirsutus) is a significant Tjukurpa species and critically endangered small wallaby, no longer found in the wild. Reptile species are found in numbers unparalleled anywhere in the world and are well adapted to the arid environment; 74 species have been recorded to date. As well, 176 native bird species, including numerous migratory species, four amphibian species and many invertebrate species have been recorded.
Uluru and Kata Tjuta provide runoff water which finds its way into moist gorges and drainage lines where isolated populations persist in an environment otherwise characterised by infertile and dry dune fields. In addition, an exceptionally high species diversity is associated with the transitional sandplain that lies between the mulga outwash zone around the monoliths and the dune fields beyond (DoNP, 2010).

► Importance for research

Anangu’s knowledge of sustainable land use derives from a detailed body of ecological knowledge which includes a classification of ecological zones. This knowledge continues to contribute significantly to ecological research and management of the park. Anangu landscape management followed a traditional regime of fire management, and temporary water resources were

husbanded by cleaning and protecting soaks and rockholes; Anangu landscape management methods are now integral to management of the park. The site is very well managed through a combination and sharing of traditional and scientific knowledge under a Board of Management comprising a majority Traditional Owners, the Director of National Parks and two experts. All park management is guided by Tjukurpa. The Anangu welcome visitors in order to enhance visitors' knowledge and appreciation of what constitutes culturally appropriate behaviour as part of the experience of visiting a jointly managed national park. (DoNP, 2010).

► Does management of the site provide jobs (e.g. for managers or rangers)?

The Park provides employment opportunities for Anangu as park rangers and in tourism roles, increasing the number of Anangu have appropriate training and experience which is a key goal of the Park Board (DoNP, 2010).

► Sacred natural sites or landscapes

Within Uluru–Kata Tjuta National Park the monolith Uluru is arguably the most distinctive and iconic landscape symbol of Australia, nationally and internationally. It conveys a powerful sense of the very long time during which the landscape of the Australian continent has evolved.

► Outdoor recreation and tourism

The Park receives some 350,000 visitors a year. The Uluru–Kata Tjuta Cultural Centre provides opportunities for visitors to learn about Tjukurpa, Anangu culture and the park. Within the bounds of appropriate access, Tjukurpa provides a basis for most of the interpretation of the park to visitors. Anangu want visitors to understand how they interpret this landscape. Tjukurpa contains information about the landscape features, the ecology, the plants and animals, and appropriate use of areas of the park. Tjukurpa has been passed down through the generations and can be shared with visitors.

► Outdoor recreation and tourism

Central Australia supports a number of tour operators and others who derive a significant proportion of their income from visitors to the park. Tourism is

central to the regional economy, particularly in terms of employment. The standard of visitor facilities that Parks Australia develops and maintains in the park greatly influences the quality of tourists' experience of the region and hence sustainability of the tourism industry. Tourism is a major export industry in Australia and is actively promoted by governments at all levels. Along with other World Heritage sites of significant natural beauty in Australia such as Kakadu National Park and the Great Barrier Reef, Uluru has become a major tourism attraction for overseas visitors.

► **Water provision (importance for water quantity and quality)**

Uluru and Kata Tjuta monoliths provide runoff water which finds its way into moist gorges and drainage lines where isolated populations persist in an environment otherwise characterised by infertile and dry dunefields within a massive desert region. The waterhole at the base of Uluru is also an important water source for the Anangu living at Mutitjulu inside the park.

Summary of benefits

Located in the remote Western Desert in Central Australia, the Uluru - Kata Tjuta National Park is part of a sacred landscape and traditional lands of the Pitjantjatjara and Yankunytjatjara Aboriginal people, who have worked with nature caring for country in a sustainable manner for many thousands of years. Over the past 200 years Europeans have introduced many feral and invasive species and behaviours and landuses causing significant damage to ecological and intangible heritage values of the site. Since its declaration as a national park in 1977 and later its return to the Traditional Owners who subsequently leased the park to the Director of National Parks, habitat on the site has been restored. It provides a range of significant ecological, cultural, social and economic services and benefits at the local, national and international level. All park management is guided by Tjukurpa (Traditional Law) Anangu work with Parks Australia in joint management of the site using a combination of traditional and scientific methods. This provides important two way learning about heritage management for site managers and for visitors.
The land has always provided for the economic well-being of Anangu. Traditionally, harvesting and using the site's resources have provided the basis for their economy. Anangu want to continue their tradition of harvesting and using resources but they also want to ensure its protection and conservation.

Anangu expect to benefit from their land being managed as a national park through direct employment in the park and through contract services being provided by Anangu enterprises or jointly owned ventures. They seek greater benefit from the use of their land for tourism including the potential for some activities to be delivered solely by Anangu enterprises (DoNP, 2010). Visitors to the Park seek opportunities to meet Aboriginal people which is an important element in national reconciliation.

Projects

Compilation of active conservation projects

№	Organization/ individuals	Project duration	Brief description of Active Projects
1	Parks Australia, Anangu, and relevant Northern Territory government departments		Baseline surveys and ongoing monitoring of the distribution and abundance of listed species and communities including EPBC Act and Northern Territory listed species. Data on EPBC Act and Northern Territory listed plant and animal species and others of conservation or cultural significance will be maintained, and management programs and activities ensure protection from inappropriate disturbance.
2	Parks Australia working closely with Anangu, the Central Land Council		Understanding the status of native wildlife populations and their interactions with fire and other environmental and climatic factors, including the use of established long-term flora and fauna monitoring sites.

№	Organization/ individuals	Project duration	Brief description of Active Projects
3	Parks Australia working closely with Anangu, the Central Land Council		Controlling buffel grass to reduce fire intensity. Current management consists of removing buffel grass by hand, a resource-intensive process. In 2012 Park rangers began trialling other methods of control, including different burning and herbicide combinations. At the same time, mapping plant species of particular management importance, such as those that are rare, at the edge of their range, under pressure from pest animals and weeds, culturally significant or fire sensitive.
4	Parks Australia working closely with Anangu, the Central Land Council		Improving knowledge about the impacts of fire regimes on flora and fauna through monitoring and research activities. Protecting fire sensitive species from inappropriate fire regimes and the impact of fire on habitats and native species, including the effects of weeds on fire and of fire on weed distribution, and the effectiveness of seasonal burning as a habitat management tool. Supporting intergenerational transfer of Anangu knowledge and skills in fire management so that fire work can continue to be done in the culturally appropriate way.
5	Parks Australia working closely with Anangu, the Central Land Council and other landholders		Study of the impacts of feral animals and weeds on park values, and improved survey and control methods. Foxes and cats are controlled to the fullest possible extent, including a baiting program. Rabbits are controlled at priority sites including around Uluru and Kata Tjuta and in reintroduction enclosures, and in other areas as agreed where they are having a significant impact on park values. Camels will be managed to ensure park values are not impacted. Priority sites for protection from camels include key visitor sites, waterholes, cultural sites, significant plant communities, the Mutitjulu Community and park infrastructure. In the longer term, options for controlling camel numbers will be identified in conjunction with adjacent landowners and other regional partners, and will include consideration of economic opportunities for Anangu.

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	N.A.	Water research on quality of water in water holes and aquifers; likely impacts of climate change and increasing usage through tourism.	
2	N.A.	The status of some listed or otherwise significant species in the park is uncertain	
3	N.A.	There is considerable scope to improve current scientific understanding of native plants and animals with increased opportunities for Anangu involvement in such programs as surveying, tracking and monitoring.	
4	N.A.	Reintroduction of some previously existing species is of significant cultural importance to strengthen Tjukurpa, to ensure younger Anangu learn about these culturally significant species, and for the health of country.	

REFERENCES

№	References
1	Australian Government Department of Environment (DoE) (2013) World Heritage Places - Uluru-Kata Tjuta National Park June 2013 at http://www.environment.gov.au/node/19818
2	Australian National Periodic Report (2002) Report on the Conservation of Uluru-Kata Tjuta National Park.
3	Director of National Parks Australia (DoNP) (2010) Management Plan, 2010- 2020 Uluru-Kata Tjuta National Park. Parks Australia North, Environment Australia, Canberra. http://www.environment.gov.au/resource/management-plan-2010…
4	Director of National Parks Australia (DoNP) (2010b) Uluru-Kata Tjuta National Park: Tourism Directions: Stage 1. Parks Australia North, Environment Australia, Canberra.
5	Friedel, M, Puckey, H, O'Malley, C, Waycott, M, Smyth, A and Miller, G (2006) Buffel grass: both friend and foe. An evaluation of the advantages and disadvantages of buffel grass use and recommendations for future research. Desert Knowledge Cooperative Research Centre, Alice Springs.
6	Gillen, JS, Hamilton, R, Low, WA, Creagh, C (eds) (2000) Biodiversity and the re-introduction of native fauna at Uluru–Kata Tjuta National Park. Proceedings of the cross-cultural workshop on fauna re-introduction, Yulara, NT. Bureau of Rural Sciences, Canberra.
7	Hennessy, K, Page, C, McInnes, K, Walsh, K, Pittock, B, Bathols, J and Suppiah, R (2004) Climate change in the Northern Territory. Consultancy report for the Northern Territory Department of Infrastructure, Planning and Environment. CSIRO.
8	Hyder Consulting (2008) The impacts and management implications of climate change for the Australian Government's protected areas. A report to the Department of the Environment, Water, Heritage and the Arts, and Department of Climate Change.
9	McAlpin, S (2006) Uluru–Kata Tjuta National Park fauna surveys 1985–2005: an overview. Report to Parks Australia.
10	Northern Territory Department of Natural Resources, Environment, the Arts and Sport (NRETAS) (2013) Conservation Significance: Uluru and Surrounds, June 2013 at http://www.lrm.nt.gov.au/__data/assets/pdf_file/0020/13880/…

№	References
11	White, M., Albrecht, D., Duguid, A., Latz, P. and Hamilton, M. (2000). Plant species and sites of botanical significance in the southern bioregions of the Northern Territory; volume 2: significant sites. A report to the Australian Heritage Commission from the Arid Lands Environment Centre. Alice Springs, NT.