

Andado and Snake Creek lakes

Location and Description

This site is located in the Simpson Desert about 245 km south-east of Alice Springs. It encompasses the low hills and rises, gibber plains and other significant habitats on Andado Station, the Snake Creek interdune floodout lakes, and the surrounding sandplains and dunefields. The floodout lakes occur between tall sand dunes in the south of the Site and comprise a network of intermittently flooded freshwater lakes and swamps. Vegetation communities within the Site include acacia and eucalypt open woodland, acacia and saltbush shrubland and spinifex grassland.

Tenure and Land Use

The Site is predominantly pastoral leasehold land and lies on two pastoral stations (Andado and New Crown). A small portion is Aboriginal freehold land held by the Pmer Ulperre Ingwemirne Arletherre Aboriginal Land Trust. The main land use within the site is pastoral operations, and a second use is Indigenous. About 1% of the site is managed as conservation reserve (Mac Clarke Conservation Reserve). The Finke community (population 265) is 36 km to the west of the Site.

Significance Rating

International Significance

Ecological Values

The varied habitats of Andado and the Snake Creek lakes support a rich fauna and flora. 11 threatened species are found in the site including three plant species (*Acacia peuce*, *Acacia pickardii* and *Eleocharis papillosa*). Eight threatened vertebrate species have been recorded within the Site, including Crest-tailed Mulgara, Brush-tailed Mulgara, Southern Marsupial Mole, Plains Mouse and Dusky Hopping Mouse. The Snake Creek floodout lakes are unusually long-lasting and can support many thousands of waterbirds.

Management Issues

Large-scale fires, a number of significant weed species, grazing by camels and cattle, and recent mining exploration may affect the conservation values of sensitive habitats within the site.

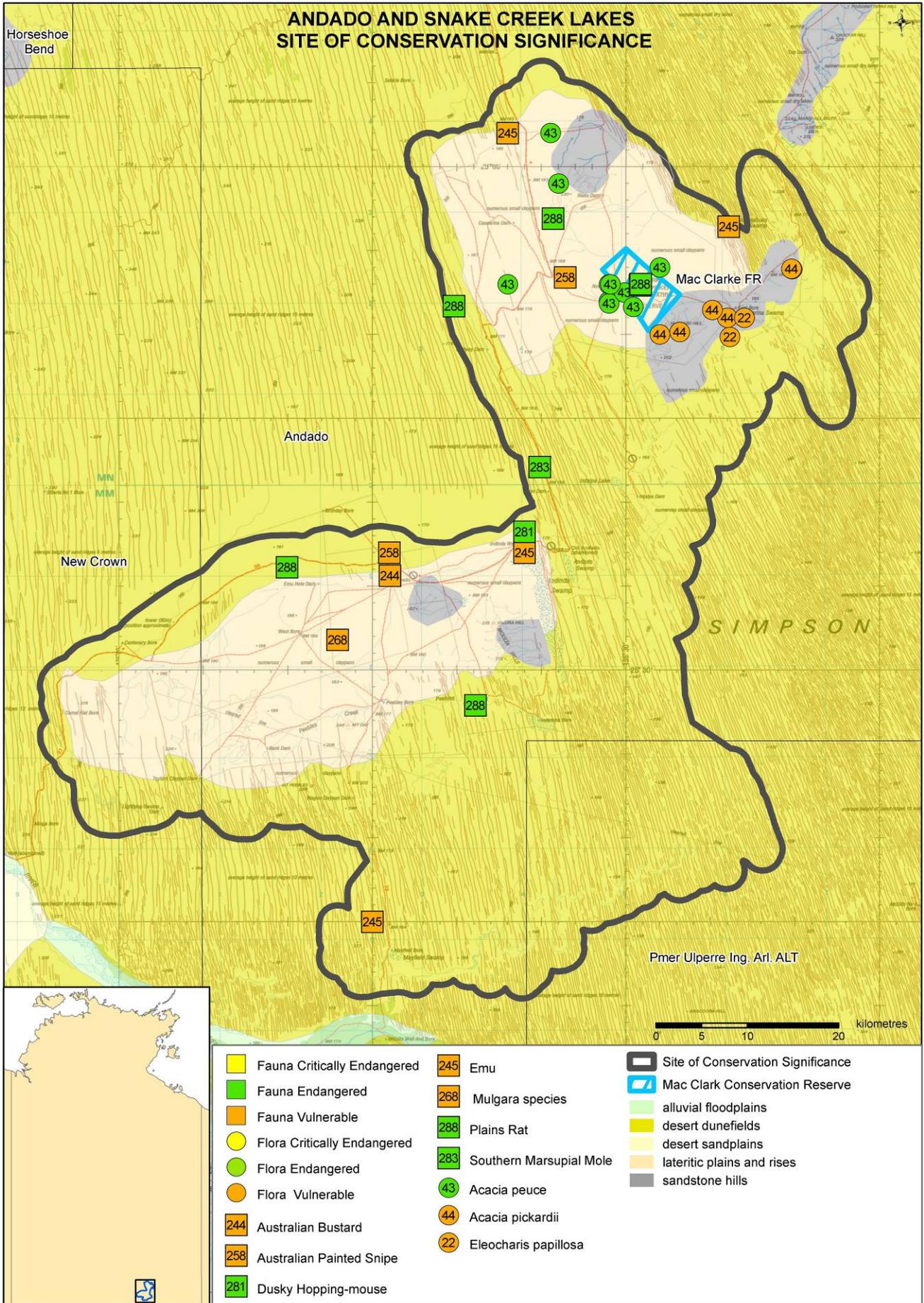
Condition

No information located.



Current Conservation Initiatives

Significant habitats on Andado Station are the focus of surveys and monitoring of threatened mammals and plants found in the site. Populations of *Acacia peuce* on the property were fenced in 2004 and North Bore was shut down to reduce the impact of cattle on the trees, under an agreement between the Northern Territory Government and the landowner. Fence condition is monitored by NT Parks and Wildlife rangers.



ANDADO AND SNAKE CREEK LAKES - SITE OF CONSERVATION SIGNIFICANCE

LOCATION	SOCS Number	66 (NT Parks and Conservation Masterplan Map Number 107)
	Latitude/Longitude	25° 26' South, 135° 23' East (at centre)
	Bioregion	Simpson Strezlecki Dunefields (98%) Stony Plains (2%)
	Description	<p>The boundary of the site is based on that delineated by White <i>et al.</i> (2000) in defining the Andado Site of Botanical Significance, with the addition of the Snake Creek interdune floodout lakes as identified by Duguid <i>et al.</i> (2005), and a 2 km buffer added. The site encompasses an area of 4031 km².</p> <p>Major vegetation communities within the site include: low shrublands of bladder saltbush <i>Atriplex versicaria</i> with open-herb/grassland; spinifex <i>Triodia basedowii</i> hummock grassland with sparse shrublands of acacia between dunes; and open-hummock grasslands of sandhill cane grass <i>Zygochloa paradoxa</i> on the dune crests (White <i>et al.</i> 2000).</p> <p>After inundation, the lakes support wetland plant species and there is a dense coverage of tall annual herbs, notably <i>Cullen cinereum</i>. Surrounding vegetation includes coolabah <i>Eucalyptus coolibah</i> subsp. <i>arida</i> (Duguid 2005).</p> <p>An area that encompasses the Beddome Range and Wilyunpa Tablelands, immediately south of this site, is also identified as a site of high conservation significance in the NT.</p>
THREATENED SPECIES	Significance Rating	International Significance
	Threatened plants and animals (Listings at National/NT level CR - Critically Endangered, EN - Endangered, VU - Vulnerable, NT - Near Threatened, LC - Least Concern, DD - Data Deficient)	<p>11 threatened species are reported from this site.</p> <p>Plants</p> <ul style="list-style-type: none"> ▪ Bird's nest wattle <i>Acacia pickardii</i> (VU/VU) ▪ Dwarf desert spike-rush <i>Eleocharis papillosa</i> (VU/VU) ▪ Waddy wood <i>Acacia peuce</i> (VU/EN) <p>Vertebrates</p> <ul style="list-style-type: none"> ▪ Australian Bustard <i>Ardeotis australis</i> (-/VU) ▪ Australian Painted Snipe <i>Rostratula australis</i> (VU/VU) ▪ Emu <i>Dromaius novaehollandiae</i> (-/VU) ▪ Brush-tailed Mulgara <i>Dasyercus blythi</i> (VU/VU) ▪ Crest-tailed Mulgara <i>Dasyercus cristicauda</i> (EN/VU) ▪ Dusky Hopping-mouse <i>Notomys fuscus</i>(VU/EN) ▪ Plains Mouse <i>Pseudomys australis</i> (VU/EN) ▪ Southern Marsupial Mole <i>Notoryctes typhlops</i> (EN/VU) <p>The population of Plains Mouse within this site is the only known breeding population of it in the NT.</p>
ENDEMIC SPECIES	Significance Rating	Not Significant
	Notes	<p>Endemic to the NT: One plant species recorded from this site is an NT endemic (<i>Eleocharis papillosa</i>).</p> <p>Other: Nine plant species recorded from the site are restricted to the Simpson Strezlecki Dunefields bioregion within the NT but are also found in other states (<i>Acacia peuce</i>, <i>Arabidella procumbens</i>, <i>Atriplex intermedia</i>, <i>Atriplex morrisii</i>, <i>Centipeda cunninghamii</i>, <i>Teucrium albicaule</i>, <i>Acacia pickardii</i>, <i>Atriplex eardleyae</i>, <i>Maireana eriantha</i>).</p> <p>The population of <i>Acacia peuce</i> within this site is one of only three known populations (Nano, Harris and Pavey 2006). It is also only population of this species that is included within a conservation reserve and has an off-reserve conservation agreement.</p>
WILDLIFE AGGREGATIONS	Significance Rating	Regional Significance
	Marine turtles	Not applicable
	Seabirds	None known
	Waterbirds	Almost 3400 waterbirds and shorebirds, comprising 36 species, were recorded during surveys of the Snake Creek floodout lakes in November 2001 (Duguid 2005). This was the highest diversity of waterbirds recorded from all wetlands surveyed in the arid NT during this period. Numbers of waterbirds could also be expected to reach more than this during the peak of a major flood event. The lakes can hold water for long periods and thus provide habitat for birds long after most natural waterbodies in the region have dried out (Duguid 2005).
	Shorebirds	None known
	Other aggregations	Raptors and owls occur in the site during outbreaks of rodents. The highly nomadic nocturnal raptor, Letter-winged Kite <i>Elanus scriptus</i> , appeared at Mac Clarke Conservation Reserve during the last rodent outbreak in 2000-2002. They bred in <i>Acacia peuce</i> trees within the reserve and numbers peaked at 126 individuals (Pavey <i>et al.</i> 2008).
WETLANDS	Significance Rating	National Significance (possibly International)
	Ramsar criteria met	Duguid <i>et al.</i> (2005) assessed the Snake Creek Interdune Floodout Lakes against criteria for listing as an Internationally Significant Wetland under the Ramsar Convention and concluded that the site meets Criteria 1, 3 and 5.
	DIWA criteria met	Duguid <i>et al.</i> (2005) assessed the Snake Creek Interdune Floodout Lakes against the criteria for listing in the Directory of Important Wetlands in Australia and concluded that it meets Criterion1 and possibly Criterion 3.

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	Notes	The Snake Creek lakes are exceptionally deep and long lasting (up to 30 months) for arid Australia (Duguid 2005). Past patterns of inundation indicate that the lakes are filled approximately every 5 years, but further study of their hydrology is needed. Water in the lakes is predominantly clear and fresh to semi-saline. Inundation of the lakes is from the Finke River.
	Rivers	Snake Creek crosses an alluvial plain that appears to overlie an older flow course of the Finke River. The sanddunes (approx. 20 000 ya) have influenced the course of Snake Creek, indicating that the Snake Creek alluvial plain is relatively recently formed (Kennedy and Sugars 2001).
FLORA	Significance Rating	Not Significant
	Notes	Restricted range species: Five plant species recorded from the site have restricted ranges within the NT (<i>Peplidium</i> sp. <i>Marla</i> , <i>Gunniopsis quadrifida</i> , <i>Dentella pulvinata</i> , <i>Maireana microcarpa</i> and <i>Plagiobothrys plurisepalus</i>).
OTHER ENVIRONMENTAL VALUES		<p>The Simpson Desert and the Mac Clark Conservation Reserve are listed on the Register of the National Estate for their natural values (Australian Heritage Council). The Mac Clark (<i>Acacia peuce</i>) Conservation Reserve is also listed on the NT Heritage Register (Heritage Advisory Council).</p> <p>Snake Creek Interdune Floodout Lakes are identified as significant for biodiversity conservation by Duguid <i>et al.</i> (2005).</p> <p>Andado is identified as a Site of Botanical Significance in White <i>et al.</i> (2000).</p> <p>Nine migratory species recorded from this site are listed under international conventions or bilateral agreements protecting migratory animals.</p> <p>One species of fish, the Desert Rainbow Fish <i>Melanotaenia splendida</i> subsp. <i>tatei</i>, known from the Finke River system, has been recorded in the longer lasting lakes within the site and other species are presumed to occur (Duguid 2005).</p> <p>The acacia and eucalypt open woodland within the site, especially in the vicinity of Mac Clarke Conservation Reserve, provides roosting and breeding opportunities for a variety of bird species, especially raptors and owls (Pavey <i>et al.</i> 2008).</p> <p>The site is in the only region of Australia where the two mulgara species co-occur.</p>
MANAGEMENT ISSUES		<p>Fire: No parts of the site were burnt more than twice in the period 1997-2005, but large-scale fires do occur. The change from a fire regime of small-scale mosaic burns to large wildfires may affect the values of the site.</p> <p>Feral animals: A recent increase in camel numbers is causing damage to vegetation (Kennedy and Sugars 2001). Feral cat, fox and rabbit are present (Eldridge <i>et al.</i> 2002; Pavey <i>et al.</i> 2008).</p> <p>Weeds and invasive exotic plants: Infestations of athel pine <i>Tamarix aphylla</i> (Weed of National Significance) are present in the site (Kennedy and Sugars 2001). <i>Emex australis</i>, <i>Ricinus communis</i> and <i>Tribulus terrestris</i> (category A and B weeds) and buffel grass <i>Cenchrus ciliaris</i> are also recorded from the site. Couch grass <i>Cynodon dactylon</i> (weed of concern; Smith 2002) is likely to be present and spreading in the site.</p> <p>Other: There is evidence of soil erosion and grazing by cattle may affect some conservation values (Kennedy and Sugars 2001). Recent mining exploration and associated infrastructure around Mac Clarke Conservation Reserve may be disturbing sensitive habitats in the north of the site.</p>
MANAGEMENT INFORMATION	NRM groups	Australian Conservation Volunteers.
	Protected areas	Mac Clarke Conservation Reserve (30 km ² / 1% of site).
	Current management plans	<p>Site-specific plans: No information located.</p> <p>National recovery plans for threatened species: <i>Acacia peuce</i> and <i>Acacia pickardii</i> (Nano <i>et al.</i> 2006); Marsupial Moles (Benshemesh 2004); Brush-tailed Mulgara, Crest-tailed Mulgara and Plains Mouse (SA Department of the Environment and Heritage in prep.).</p> <p>Other management plans: Australian Weeds Strategy (NRMMC 2007); Threat Abatement Plan for Predation by Feral Cats (Environment Australia 1999); Threat Abatement Plan for Predation by the European Red Fox (Environment Australia 1999).</p>
	Monitoring programs and research projects	<p>Survey and monitoring of <i>Acacia peuce</i> and <i>Acacia pickardii</i> on Andado Station (Threatened Species unit, NRETAS, Alice Springs).</p> <p>Survey and monitoring of threatened and near-threatened small mammals in the southern NT (Threatened Species unit, NRETAS, Alice Springs).</p> <p>Survey and habitat assessment for the Bronzeback Snake-lizard in the southern NT (Threatened Species unit, NRETAS, Alice Springs).</p> <p>Investigating Indigenous Ecological Knowledge of threatened acacias (Threatened Species unit, NRETAS, Alice Springs in collaboration with the Central Land Council).</p> <p>Implementation of the recovery plan for marsupial moles (Threatened Species unit, NRETAS, Alice Springs).</p> <p>There are 13 Tier 1 rangeland monitoring points within this site (Karfs and Bastin 2001).</p> <p>Across the NT, fire is mapped continuously under the North Australia Fire Information Project http://www.firenorth.org.au/nafi/app/init.jsp</p>
	Management recommendations	<p>Develop collaborative land management on southern sections of Andado (NRETA 2005).</p> <p>Undertake a detailed study of the hydrology of the Snake Creek lakes.</p>

KEY REFERENCES	Papers and reports	Eldridge, S. R., Shakeshaft, B. J., and T. J. Nano (2002). <i>The impact of wild dog control on cattle, native and introduced herbivores and introduced predators in central Australia</i> . Final report to Bureau of Rural Sciences. Northern Territory Parks and Wildlife Commission, Alice Springs, Northern Territory, Australia. Pavey, C. R., Eldridge, S. R. and Heywood, M. (2008). Native and introduced predator population dynamics and prey selection during a rodent outbreak in arid Australia. <i>Journal of Mammalogy</i> 89: 674-683. Purdie, R. (1984). <i>Land systems of the Simpson Desert Region</i> , Natural Resources Series No.2, Division of Water and Land Resources, CSIRO, Melbourne.
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Andado sand dune (Photo: Chris Pavey)



Stand of *Acacia peuce* at Mac Clarke Conservation Reserve, Andado (Photo: Chris Pavey)