



# Greater MacDonnell Ranges

## Location and Description

The Greater MacDonnell Ranges extend some 250 km west and 170 km east of Alice Springs. The ranges form a spectacular system of rugged metamorphic and sedimentary ridges and valleys, and are made up of several range systems. Most ranges run east-west, often with steep south-facing slopes. The ranges are cut by gorges and gaps, many of which contain long-lasting or permanent water. A wide variety of habitats occur, from spinifex hummock grassland to riparian woodland and aquatic plant communities.

## Tenure and Land Use

This Site is mostly a mix of pastoral leasehold and Aboriginal freehold land. Freehold title is held by seven Aboriginal Land Trusts (Haasts Bluff, Ltalaltuma, Ntaria, Roulpmaulpma, Rodna, Urrampinyi Itjtjjarri and Iwupataka) and the site is within sixteen pastoral leases (Loves Creek, Ambalindum, The Garden, Mount Riddock, Glen Helen, Hamilton Downs, Narwietooma, Owen Springs, Henbury, Orange Creek, Undoolya, Bond Springs, Ringwood, Amburla, Yambah and Bushy Park). The remaining portions of the Site are occupied up by the town of Alice Springs and other smaller communities and outstations. The main land uses within the Site are pastoral operations and Indigenous. About 11% of the Site is managed as conservation reserves and is used for conservation and tourism, and other parts of the Site are used for residential purposes.

## Significance Rating

International Significance

## Ecological Values

The MacDonnell Ranges and surrounding ranges harbour a very high number of threatened species (about 53) including 14 plant, 18 vertebrate and 21 invertebrate species. A further seven vertebrate species recorded from the Site are believed to now be locally extinct. The ranges support a significant number of endemic species including at least 13 plant and 15 land snail species that are found nowhere else, and many other plant species have a restricted range or are not found elsewhere in Central Australia. The ranges contain numerous long-lasting and permanent springs and wetlands, many of which help to support diverse flora and fauna species and a mesic environment, in the otherwise arid landscape of Central Australia.

## Management Issues

Ongoing management issues within the Site include weeds and invasive exotic plants such as buffel grass and couch grass, and feral animals, especially rabbit, horse, fox and cat. Grazing stock and feral herbivores can damage significant refuge areas, and need to be managed around waterholes. Intense, hot fires are also impacting on



Google Earth imagery

sensitive habitats and are a management issue. High tourist numbers can also place pressure on some sensitive habitats.

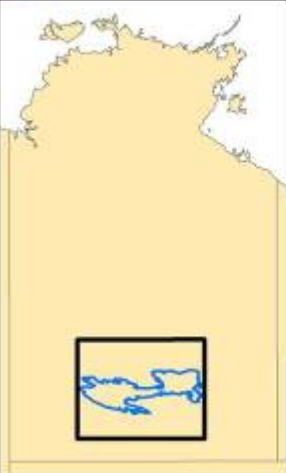
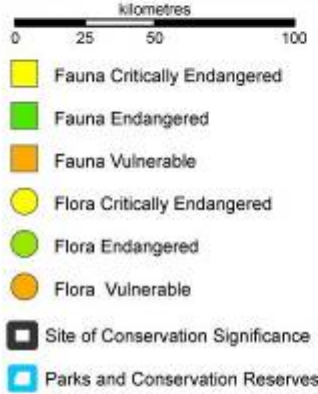
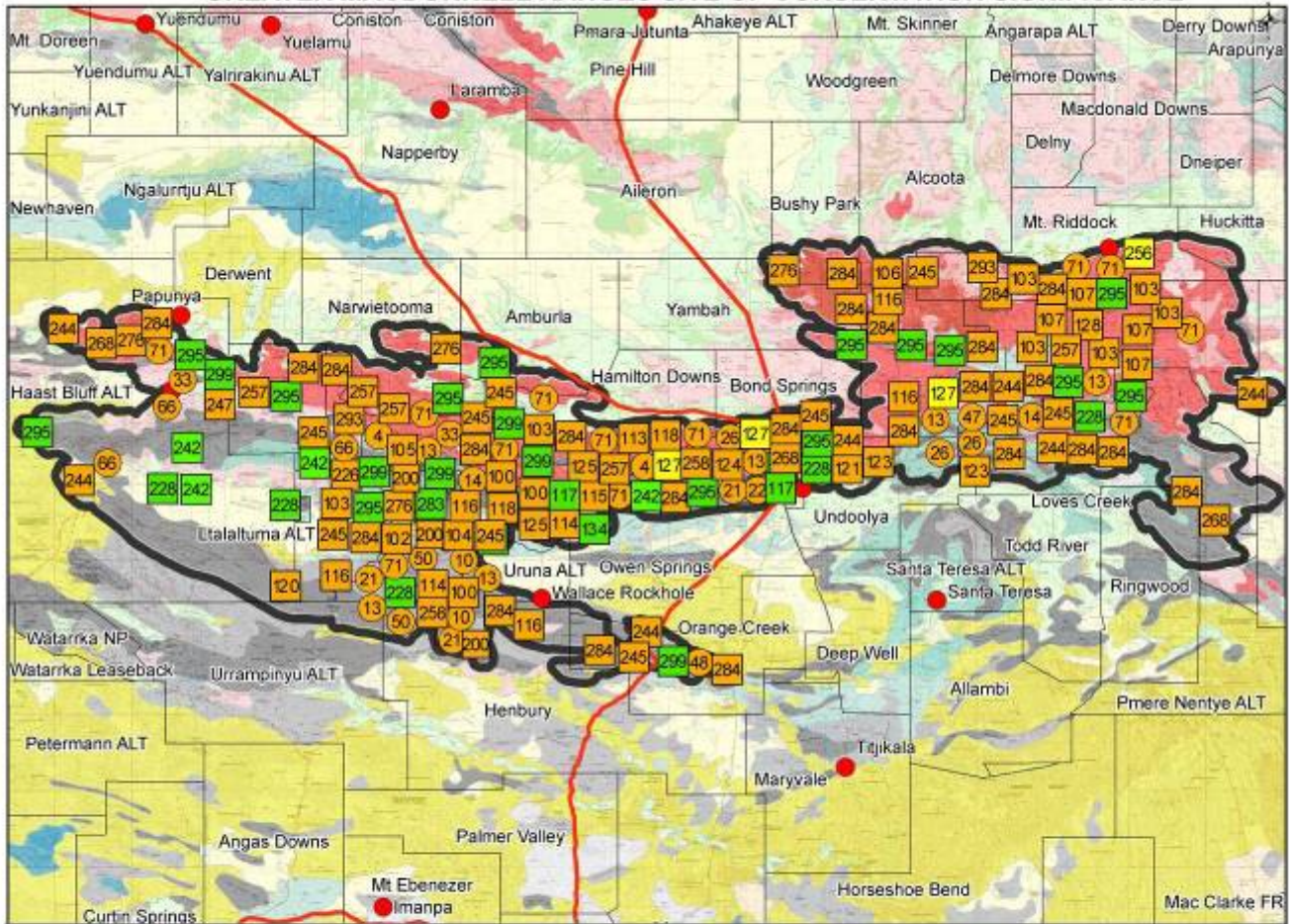
## Condition

The condition of the ranges varies across the Site. The more inaccessible areas, such as the Chewings Range, are considered to be in good condition. Feral herbivores and livestock have contributed to the degradation of some areas, particularly around waterholes.

## Current Conservation Initiatives

Tjuwanpa rangers based from Hermannsburg are managing fire, priority weeds and feral animals around Hermannsburg, and there are plans to develop other Indigenous ranger programs in the region. Parks and Wildlife rangers are managing reserves and Greening Australia is co-ordinating a program of off-reserve conservation initiatives within the site. A number of research projects are being conducted to improve knowledge and management of threatened species and some Landcare activity occurs on public lands within the ranges.

GREATER MACDONNELL RANGES SITE OF CONSERVATION SIGNIFICANCE



<span style="color: orange;">●</span> 276 Bilby	<span style="color: orange;">●</span> 114 Ellery Gorge Land Snail	<span style="color: orange;">●</span> 4 <i>Actinotus schwarzzii</i>
<span style="color: orange;">●</span> 284 Black-footed Rock-wallaby	<span style="color: orange;">●</span> 115 Emile's Land Snail	<span style="color: orange;">●</span> 1 <i>Adiantum capillus-veneris</i>
<span style="color: green;">●</span> 299 Central Rock-rat	<span style="color: orange;">●</span> 118 Filix's Land Snail	<span style="color: orange;">●</span> 21 <i>Bolboschoenus caldwellii</i>
<span style="color: green;">●</span> 295 Common Brushtail Possum	<span style="color: orange;">●</span> 106 Gillen Creek Land Snail	<span style="color: orange;">●</span> 22 <i>Eleocharis papillosa</i>
<span style="color: orange;">●</span> 293 Long-tailed Dunnart	<span style="color: orange;">●</span> 121 Jessie's Land Snail	<span style="color: orange;">●</span> 48 <i>Eremophila</i> sp. Rainbow Valley
<span style="color: orange;">●</span> 268 Mulgara species	<span style="color: orange;">●</span> 116 Land Snail ( <i>S. esau</i> )	<span style="color: orange;">●</span> 10 <i>Livistona mariae mariae</i>
<span style="color: green;">●</span> 283 Southern Marsupial Mole	<span style="color: green;">●</span> 117 Land Snail ( <i>S. euzyga</i> )	<span style="color: orange;">●</span> 71 <i>Macrozamia macdonnellii</i>
<span style="color: orange;">●</span> 244 Australian Bustard	<span style="color: orange;">●</span> 102 Land Snail ( <i>B. squamulosa</i> )	<span style="color: orange;">●</span> 13 <i>Minuria tridens</i>
<span style="color: orange;">●</span> 258 Australian Painted Snipe	<span style="color: orange;">●</span> 104 Land Snail ( <i>D. hillieri</i> )	<span style="color: orange;">●</span> 14 <i>Olearia macdonnellensis</i>
<span style="color: orange;">●</span> 245 Emu	<span style="color: orange;">●</span> 103 Land Snail ( <i>D. sublevata</i> )	<span style="color: orange;">●</span> 25 <i>Ricinocarpus gloria-medii</i>
<span style="color: orange;">●</span> 252 Malleefowl	<span style="color: orange;">●</span> 107 Land Snail ( <i>G. grandituberculatum</i> )	<span style="color: orange;">●</span> 66 <i>Santalum acuminatum</i>
<span style="color: orange;">●</span> 256 Night Parrot	<span style="color: orange;">●</span> 113 Land Snail ( <i>S. caupona</i> )	<span style="color: orange;">●</span> 90 <i>Thryptomene hexandra</i>
<span style="color: orange;">●</span> 257 Princess Parrot	<span style="color: orange;">●</span> 120 Land Snail ( <i>S. illarana</i> )	<span style="color: orange;">●</span> 33 <i>Wrixonia schultzei</i>
<span style="color: orange;">●</span> 247 Red Goshawk	<span style="color: orange;">●</span> 123 Land Snail ( <i>S. rossana</i> )	<span style="color: lightgreen;">■</span> alluvial floodplains
<span style="color: green;">●</span> 242 Thick-billed Grasswren	<span style="color: orange;">●</span> 124 Runutjirbana Land Snail	<span style="color: yellow;">■</span> desert dunefields
<span style="color: orange;">●</span> 226 Great Desert Skink	<span style="color: orange;">●</span> 100 Spencers Land Snail	<span style="color: yellow;">■</span> desert sandplains
<span style="color: green;">●</span> 228 Slater's Egernia	<span style="color: orange;">●</span> 128 Watt's Land Snail	<span style="color: pink;">■</span> granite hills
<span style="color: orange;">●</span> 200 Finke Goby	<span style="color: orange;">●</span> 105 West MacDonnell's Land Snail	<span style="color: pink;">■</span> granite plains and rises
<span style="color: orange;">●</span> 127 Bednall's Land Snail	<span style="color: orange;">●</span> 125 Winnecke Land Snail	<span style="color: red;">■</span> granite ranges
<span style="color: green;">●</span> 134 Desert Sand Skipper	<span style="color: orange;">●</span> 47 <i>Acacia undoolyana</i>	<span style="color: yellow;">■</span> lateritic plains and rises
		<span style="color: lightblue;">■</span> limestone hills
		<span style="color: lightblue;">■</span> limestone plains and rises
		<span style="color: blue;">■</span> salt pans
		<span style="color: grey;">■</span> sandstone hills
		<span style="color: grey;">■</span> sandstone plains and rises
		<span style="color: black;">■</span> sandstone ranges

LOCATION	<b>SOCS Number</b>	55 (NT Parks and Conservation Masterplan Map Number 91)
	<b>Latitude/Longitude</b>	23° 36' South, 133° 27' East (at centre)
	<b>Bioregion</b>	MacDonnell Ranges (90%) Burt Plain (9%) Great Sandy Desert (1%)
	<b>Description</b>	<p>The MacDonnell Ranges are divided into east and west sets of ranges. The West MacDonnell Ranges refer to the ranges west of Alice Springs and include the Chewings, Heavitree, Idirriki and Mereenie Ranges. The East MacDonnell Ranges, to the east of Alice Springs, include The Fergusson, Cavanaugh, Amarata and Georgina Ranges.</p> <p>The Greater MacDonnell Ranges includes all of these ranges and spans some 250 km west and 170 km east of Alice Springs. The boundary of the site is delineated based on sites of botanical significance within the ranges identified by White <i>et al.</i> (2000), with additions of similar land units (based on land systems mapping) and a 2 km buffer applied to the whole site. The site approximates the MacDonnell Ranges Bioregion and has an area of 31 326 km<sup>2</sup>.</p> <p>The ranges are dominated by two geological units; sedimentary rocks of the Amadeus Basin and metamorphic rocks characteristic of the Arunta Block (White <i>et al.</i> 2000). They provide a diverse range of landforms and habitat types, from high, mostly east-west running, ridge tops, to steep south-facing gorges which frequently support moist environments, and in some cases, permanent water (Morton <i>et al.</i> 1995). There are also mountains and hills of granite, gneiss, quartzite, limestone and schist, sandstone plateaus, alluvial fans, sandplains, dunefields and floodplains.</p> <p>Major vegetation communities within the ranges include spinifex <i>Triodia</i> sp. hummock grassland with mixed species open-woodland overstorey, spinifex <i>Triodia</i> sp. open-hummock grassland with mulga <i>Acacia aneura</i> tall sparse-shrubland overstorey, and Witchetty bush <i>Acacia kempeana</i> tall open-shrubland with <i>Senna</i>, <i>Eremophila</i> open-shrubland understorey (White <i>et al.</i> 2000).</p> <p>The Waterhouse Range is identified as a separate site of high conservation significance and shares a small section of its western boundary with the Greater MacDonnell Ranges site. Mount Leibig, an outlier immediately north-west of the Greater MacDonnell Ranges, is also identified as site high conservation significance in the NT.</p>
THREATENED SPECIES	<b>Significance Rating</b>	<b>International Significance</b>
	<b>Threatened plants and animals</b> (Listings at National/NT level <b>CR</b> - Critically Endangered, <b>EN</b> - Endangered, <b>VU</b> - Vulnerable, <b>NT</b> - Near Threatened, <b>LC</b> - Least Concern, <b>DD</b> - Data Deficient)	53 threatened species are reported from this site. <b>Plants</b> <ul style="list-style-type: none"> <li>▪ Desert flannel flower <i>Actinotus schwarzii</i> (VU/VU)</li> <li>▪ Dwarf desert spike-rush <i>Eleocharis papillosa</i> (VU/VU)</li> <li>▪ <i>Eremophila</i> sp. Rainbow Valley (VU/VU)</li> <li>▪ Glory of the centre <i>Ricinocarpos gloria-medii</i> (VU/VU)</li> <li>▪ MacDonnell Ranges cycad <i>Macrozamia macdonnellii</i> (VU/NT)</li> <li>▪ Marsh club-rush <i>Bolboschoenus caldwellii</i> (-/EN)</li> <li>▪ Minnie daisy <i>Minuria tridens</i> (VU/VU)</li> <li>▪ <i>Olearia macdonnellensis</i> (VU/VU)</li> <li>▪ Palm Valley myrtle <i>Thryptomene hexandra</i> (-/VU)</li> <li>▪ Quandong <i>Santalum acuminatum</i> (-/VU)</li> <li>▪ Red cabbage palm <i>Livistona mariae</i> subsp. <i>mariae</i> (VU/VU) (This species is found only at Palm Valley.)</li> <li>▪ Sickie-leaf wattle (Undoolya wattle) <i>Acacia undoolyana</i> (VU/VU) (This species is known only from the East MacDonnell Ranges.)</li> <li>▪ Venus-hair fern <i>Adiantum capillus-veneris</i> (-/VU)</li> <li>▪ <i>Wrixonia schultzei</i> (VU/VU)</li> </ul> <b>Vertebrates</b> <ul style="list-style-type: none"> <li>▪ Australian Bustard <i>Ardeotis australis</i> (-/VU)</li> <li>▪ Australian Painted Snipe <i>Rostratula australis</i> (VU/VU)</li> <li>▪ Emu <i>Dromaius novaehollandiae</i> (-/VU)</li> <li>▪ Malleefowl <i>Leipoa ocellata</i> (VU/CR)</li> <li>▪ Night Parrot <i>Pezoporus occidentalis</i> (EN/CR)</li> <li>▪ Princess Parrot <i>Polytelis alexandrae</i> (VU/VU)</li> <li>▪ Red Goshawk <i>Erythrotriorchis radiatus</i> (VU/VU)</li> <li>▪ Black-footed Rock-wallaby <i>Petrogale lateralis</i> (VU/NT)</li> <li>▪ Brush-tailed Mulgara <i>Dasymercus blythi</i> (VU/VU)</li> <li>▪ Central Rock-rat <i>Zyomys pedunculatus</i> (EN/EN)</li> <li>▪ Common Brushtail Possum <i>Trichosurus vulpecula vulpecula</i> (-/VU)</li> <li>▪ Crest-tailed Mulgara <i>Dasymercus cristicauda</i> (EN/VU)</li> <li>▪ Bilby <i>Macrotis lagotis</i> (VU/VU)</li> <li>▪ Long-tailed Dunnart <i>Sminthopsis longicaudata</i> (-/VU)</li> <li>▪ Southern Marsupial Mole <i>Notoryctes typhlops</i> (EN/VU)</li> <li>▪ Great Desert Skink <i>Egernia kintorei</i> (VU/VU)</li> <li>▪ Slater's Skink <i>Egernia slateri</i> (EN/EN)</li> <li>▪ Finke Goby <i>Chlamydogobius japalpa</i> (-/VU)</li> </ul> <b>Invertebrates</b> <ul style="list-style-type: none"> <li>▪ <i>Basedowena squamulosa</i> (-/VU)</li> </ul>

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		<ul style="list-style-type: none"> <li>▪ Bednall's Land Snail <i>Sinumelon bednalli</i> (EN/CR)</li> <li>▪ Desert Sand Skipper <i>Croitana aestiva</i> (EN/EN)</li> <li>▪ Ellery Gorge Land Snail <i>Semotrachia elleryi</i> (-/VU)</li> <li>▪ Emiles Land Snail <i>Semotrachia emilia</i> (-/VU)</li> <li>▪ Filix Land Snail <i>Semotrachia filixiana</i> (-/VU)</li> <li>▪ Gillen Creek Land Snail <i>Granulomelon gilleni</i> (-/VU)</li> <li>▪ Land Snail <i>Semotrachia jessieana</i> (-/VU)</li> <li>▪ Land Snail <i>Dirutrachia sublevata</i> (-/VU)</li> <li>▪ Land Snail <i>Divellomelon hillieri</i> (-/EN)</li> <li>▪ Land Snail <i>Granulomelon grandituberculatum</i> (-/VU)</li> <li>▪ Land Snail <i>Semotrachia caupona</i> (-/VU)</li> <li>▪ Land Snail <i>Semotrachia euzyga</i> (EN/EN)</li> <li>▪ Land Snail <i>Semotrachia esau</i> (-/VU)</li> <li>▪ Land Snail <i>Semotrachia illarana</i> (-/VU)</li> <li>▪ Land Snail <i>Semotrachia rossana</i> (-/VU)</li> <li>▪ Runutjirbana Land Snail <i>Semotrachia runutjirbana</i> (-/VU)</li> <li>▪ Spencer's Land Snail <i>Bothriembryon spenceri</i> (-/VU)</li> <li>▪ Watt's Land Snail <i>Vidumelon wattii</i> (-/VU)</li> <li>▪ Western MacDonnell's Land Snail <i>Granulomelon arcigerans</i> (-/VU)</li> <li>▪ Winnecke Land Snail <i>Semotrachia winneckeana</i> (-/VU)</li> </ul> <p>Seven threatened vertebrate species previously reported from the site are believed to now be locally extinct (Brush-tailed Bettong <i>Bettongia penicillata</i>, Mala <i>Lagorchestes hirsutus</i>, Red-tailed Phascogale <i>Phascogale calura</i>, Shark Bay Mouse <i>Pseudomys fieldi</i>, Thick-billed Grasswren <i>Amytornis textilis</i>, Golden Bandicoot <i>Isoodon auratus</i> and the Western Quoll <i>Dasyurus geoffroii</i>). The Bilby <i>Macrotis lagotis</i> may also be locally extinct.</p>
<p><b>ENDEMIC SPECIES</b></p>	<p><b>Significance Rating</b></p>	<p><b>International Significance</b></p>
	<p><b>Notes</b></p>	<p><b>Endemic to the site:</b> 13 plant species are endemic to the site (<i>Acacia dolichophylla</i>, <i>Acacia undoolyana</i>, <i>Actinotus schwarzii</i>, <i>Aristida latzii</i>, <i>Austrostipa feresetacea</i>, <i>Hibbertia</i> sp. Chewings Range, <i>Hydrocotyle</i> sp. Harts Range, <i>Indigofera</i> sp. Areyonga, <i>Livistona</i> subsp. <i>mariae</i>, <i>Olearia macdonnellensis</i>, <i>Pimelea interioris</i>, <i>Ricinocarpos gloria-medii</i> and <i>Wrixonia schultzii</i>). A further three plant taxa are probably endemic to the site: <i>Daucus glochidiatus</i> var. <i>Mulga hills</i>, <i>Olearia</i> sp. Mt Edward and <i>Caesia</i> sp. Mt Zeil.</p> <p>There is also a high level of endemism in land snails within the MacDonnell Ranges: 23 species are recorded from the Western MacDonnell Range of which four are endemic; 14 species are recorded from the Eastern MacDonnell Range of which four are endemic; 25 species are known from the Finke Gorge National Park of which seven are endemic.</p> <p><b>Endemic to the bioregion:</b> 16 plant species reported from this site (including <i>Austrostipa centralis</i>, <i>Eucalyptus lucens</i>, <i>Stenanthemum centrale</i> and the 13 taxa endemic to the site) are known only from the MacDonnell Ranges Bioregion.</p> <p><b>Endemic to the NT:</b> 40 plant and eight vertebrate species found at the site are found only in the NT.</p> <p><b>Other:</b> 12 plant species found at the site only occur in the MacDonnell Ranges bioregion within the NT, but also occur in other states. Five occur only in the Finke bioregion in the NT, but occur in other states, and two occur only in the Burt Plains bioregion, but are found in other states.</p> <p>Three fish species recorded from the site are endemic to the Finke River system, <i>Craterocephalus centralis</i>, <i>C. japalpa</i> and <i>Morgunda larapintae</i> (Wager and Unmack 2000).</p>
<p><b>WILDLIFE AGGREGATIONS</b></p>	<p><b>Significance Rating</b></p>	<p><b>Not Significant</b></p>
	<p><b>Marine turtles</b></p>	<p>Not applicable</p>
	<p><b>Seabirds</b></p>	<p>None known</p>
	<p><b>Waterbirds</b></p>	<p>Several natural and human-made waterbodies in the region support waterbirds and shorebirds. These include Ellery Creek Big Hole, Glen Helen Gorge and adjacent areas of the Finke River, Boggy Hole and the Alice Springs Sewerage Ponds.</p>
	<p><b>Shorebirds</b></p>	<p>As above</p>
	<p><b>Other aggregations</b></p>	<p>Aggregations of two species of insectivorous bats occur in cave systems and abandoned mines within the site. These species are the Inland Cave Bat, <i>Vespadelus finlaysoni</i>, and Hill's Sheathtail-bat, <i>Taphozous hilli</i>.</p>
<p><b>WETLANDS</b></p>	<p><b>Significance Rating</b></p>	<p><b>International Significance</b></p>
	<p><b>Ramsar criteria met</b></p>	<p>No wetlands within the site are currently listed as Ramsar sites, however Duguid <i>et al.</i> (2005) conducted an assessment of three wetland areas against the criteria for listing as a wetland of international importance under the Ramsar convention, with details as follows:</p> <p>The permanent and long-term waterholes of the Finke River system - Criteria met: 1,2,3,4,7  Palm Valley area springs, rockholes and palm groves - Criteria met: 1,2,3 (possibly also 4)  Chewings Range permanent springs - Criteria met: 1,3</p>

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	<b>DIWA criteria met</b>	<p>Finke River Headwater Gorges System is listed on the Directory of Important Wetlands in Australia (DIWA) with details as follows:                      ID: NT002 Finke River Headwater Gorges System.                      Criteria met: 1,2,3,5,6 Wetland type: B1                      Duguid <i>et al.</i> (2005) propose replacing this DIWA site with the Finke River and Chewings Range systems outlined in the section above.</p>
	<b>Notes</b>	<p>The Finke River flows episodically, but there are approximately eight large permanent waterholes, plus several smaller permanent and/or long-term waterholes in the headwaters of tributaries of the Finke River (Western MacDonnell ranges). These include Redbank, Ormiston, Serpentine Gorges and Ellery Creek Big Hole, Fish Hole, Hugh Gorge, Standley Chasm, Glen Helen Gorge. These are the only natural permanent waterbodies in the bioregion and provide an important drought refuge for many species, particularly fish and aquatic plants (Duguid <i>et al.</i> 2005).</p> <p>The Chewings Range has a number of permanent springs which feed many of the waterholes in the Finke River Headwaters. These springs support permanent mesic environments ranging from small patches of ferns, to larger patches on saturated soils covering half a hectare, plus streams and rockholes (Duguid 2005). These mesic habitats are very unusual, in the otherwise arid environment of Central Australia, and support species and communities that are relictual of wetter climates of the past (Duguid <i>et al.</i> 2005).</p> <p>The Palm Valley area contains long-term, possibly permanent, springs, shallow rockpools and groves of palm valley palms <i>Livistona mariae</i> subsp. <i>mariae</i> (endemic to the MacDonnell Ranges) along watercourses. These palms are the most obvious component of a set of rare communities of wetland flora and fauna in the area. The palms grow along drainage lines but are largely dependent on groundwater discharge from the Hermannsburg Sandstone aquifer system (Duguid <i>et al.</i> 2005).</p> <p>There are many endemic plants and animals dependent on these wetland systems, and they are listed in the endemic species section above.</p> <p>This site</p> <p>The Glen Helen Mound Springs and the Spring-fed pools of Western Finke River Catchment have been nominated as national High Conservation Value Aquatic Ecosystems (the finalised list of HCVAE will replace the DIWA list), and are priority HCVAEs in the Caring for our Country Business Plan 2009-2010 (Commonwealth of Australia 2008).</p>
	<b>Rivers</b>	<p>The site includes the headwaters of the Finke River, which is the largest of the central Australian river systems (Griffen <i>et al.</i> 1989). It is an ephemeral river, and flows in a south-easterly direction for almost 400 km to the western edge of the Simpson Desert, where it opens out into an extensive floodout (Eldridge and Reid 1998).</p>
FLORA	<b>Significance Rating</b>	<b>International Significance</b>
	<b>Notes</b>	<p><b>Restricted range species:</b> 116 plant species reported for the site have restricted ranges in the NT.  <b>Relictual species:</b> 15 relictual species are reported from the site (<i>Adiantum capillus-veneris</i>, <i>Arthropodium strictum</i>, <i>Bolboschoenus caldwellii</i>, <i>Bulbostylis pyriformis</i>, <i>Carex fascicularis</i>, <i>Chenopodium pumilio</i>, <i>Clematis decipiens</i>, <i>Doodia caudate</i>, <i>Hibiscus sturtii</i> var. <i>sturtii</i>, <i>Histiopteris incisa</i>, <i>Juncus continuus</i>, <i>Lomandra patens</i>, <i>Lythrum paradoxum</i>, <i>Oxalis radicata</i> and <i>Potamogeton crispus</i>)</p>
OTHER ENVIRONMENTAL VALUES		<p>The West MacDonnell National Park has been nominated to the Australian Council for national heritage listing and is expected to be nominated for UNESCO World Heritage listing.</p> <p>The Greater MacDonnell Ranges include many areas listed on the Register of the National Estate, including 16 places identified for natural values (Australian Heritage Council).</p> <p>The West MacDonnell Ranges is proposed to be nominated by Birds Australia as an internationally-recognised <i>Important Bird Area</i> (G. Dutson in prep.).</p> <p>The MacDonnell Ranges are identified as a site of significant refugia for biological diversity by Morton <i>et al.</i> (1995).</p> <p>28 sites within the Greater MacDonnell Ranges are identified as Sites of Botanical Significance in White <i>et al.</i> (2000).</p> <p>The West MacDonnell Ranges are considered one of the two most significant areas in the NT for species richness, restricted range and endemic species and for threatened plants (Woinarski and Connors 1997).</p> <p>Four wetland areas within the site are identified as being significant for biodiversity conservation by Duguid <i>et al.</i> (2005).</p> <p>41 migratory species recorded from this site are listed under international conventions or bilateral agreements protecting migratory animals.</p> <p>Ten fish species are recorded from the West MacDonnell Ranges, and this number is considered high compared to one to seven species recorded from waterholes within other major ranges of the arid region (DIWA). The most abundant species recorded from the ranges include the Spangled Grunter <i>Leiopotherapon unicolor</i>, Desert Rainbowfish <i>Melanotaenia splendida tatei</i> and Bony Bream <i>Nematalosa erebi</i> (DIWA). Three species of fish are endemic to the Finke River system (<i>Craterocephalus centralis</i>, <i>C. japalpa</i> and <i>Morgunda larapintae</i>) (Duguid 2005).</p> <p>Eight frog species are known from the ranges including one <i>Litoria gilleni</i> confined to major permanent rockholes.</p> <p>Osprey <i>Pandion haliaetus</i> occurs irregularly at Ormiston and Glen Helen Gorges, hundreds of kilometres away from its usual coastal habitat.</p>

MANAGEMENT ISSUES		<p><b>Fire:</b> In the period 1997-2005, a large proportion (63%) of the site was burnt less than twice and no parts of the site were burnt more than four times. Changed fire regimes, and increased intensity of wildfires, often fuelled by invasive exotic plants, are impacting on fire-sensitive plant species at the site.</p> <p><b>Feral animals:</b> Feral horses occur in large numbers in the ranges and are causing damage in some areas (W. Dobbie, Central Land Council, pers comm.). Predation by feral cats and foxes is a threatening process for several vertebrate species in the site.</p> <p><b>Weeds and invasive exotic plants:</b> Four Weeds of National Significance occur within the site (parkinsonia <i>Parkinsonia aculeata</i>, <i>Prosopis pallida</i>, <i>Prosopis velutina</i> and athel pine <i>Tamarix aphylla</i>) and 27 declared Category A and B weeds are also recorded from the site. The invasive exotic plants buffel grass <i>Cenchrus ciliaris</i>, <i>Cyperus involucratus</i> and couch grass <i>Cynodon dactylon</i> are widespread, and buffel and couch grass are considered to be major management issues within the site (W. Dobbie, Central Land Council, pers comm.).</p> <p><b>Other:</b> Tourism is an important and expanding land use within the ranges and it needs to be managed carefully to minimise damage to important ecosystems.</p> <p>Poor coordination of stakeholders, uncertainties about tenure, exploration and mining activities, and cattle damage to waterholes, have all been identified as factors potentially affecting the conservation values of this site.</p>
	<b>NRM groups</b>	Tjuwanpa Rangers (Hermannsburg); Greening Australia (Alice Springs); Australian Conservation Volunteers (Alice Springs); Green Corps (Alice Springs).
	<b>Protected areas</b>	West MacDonnell Ranges National Park (2276 km <sup>2</sup> /7.3% of site), Owen Springs Reserve (554km <sup>2</sup> /1.8%), Finke Gorge National Park (361 km <sup>2</sup> /1.2%), Ruby Gap Nature Park (93 km <sup>2</sup> /0.3%), Arltunga Historical Reserve (54 km <sup>2</sup> /0.2%), Tnorala Conservation Reserve (48 km <sup>2</sup> /0.2%), Rainbow Valley Nature Reserve (22 km <sup>2</sup> /0.1%), Ilparpa Swamp Wildlife Protected Area (21 km <sup>2</sup> /0.1%), Alice Springs Telegraph Station Historical Reserve (20 km <sup>2</sup> /0.1%), Trepina Gorge (18 km <sup>2</sup> /0.1%), Alice Springs Desert Park (13 km <sup>2</sup> / $<0.1\%$ ), Emily and Jessie Gaps Nature Park (12 km <sup>2</sup> / $<0.1\%$ ), Kuyunba Conservation Reserve (6 km <sup>2</sup> / $<0.1\%$ ), N'Dhala Gorge Nature Park (5 km <sup>2</sup> / $<0.1\%$ ), Corroboree Rock Conservation Reserve (0.1 km <sup>2</sup> / $<0.1\%$ ), N'Dhala Gorge Nature Park (5 km <sup>2</sup> / $<0.1\%$ ), Heavtree Gap Police Station Historical Reserve ( $<0.1$ km <sup>2</sup> / $<0.1\%$ ), John Flynn's Grave Historical Reserve ( $<0.1$ km <sup>2</sup> / $<0.1\%$ ).
	<b>Current management plans</b>	<p><b>Site-specific plans:</b> West MacDonnell National Park Draft Plan of Management (NRETA 2002); Jessie and Emily Gaps Nature Park Plan of Management (NRETA 2000); Larapinta Trail Management Strategy (Mackay and Brown 2004); Rainbow Valley Conservation Reserve Joint Management Plan (NRETA 2008); Alice Springs Telegraph Station Historical Reserve Plan of Management (NRETA 2001); Loves Creek Natural Resource Assessment (CLC).</p> <p><b>National recovery plans for threatened species:</b> Greater Bilby (Pavey 2006); Glory of the Centre <i>Ricinocarpos gloria-medii</i>, and the Sick-leaved wattle <i>Acacia undoolyana</i> (Nano <i>et al.</i> 2006); Great Desert Skink/Tjakura (McAlpin 2001); Slater's Skink (Pavey 2004); Southern Marsupial Mole (Benshemesh 2004); Flannel Flower <i>Actinotus schwarzii</i>, Minnie Daisy <i>Minuria Tridens</i> and <i>Olearia macdonnellensis</i> (draft recovery plan, Nano and Pavey 2008); MacDonnell Ranges cycad <i>Macrozamia macdonnellii</i> (draft recovery plan, Nano and Pavey 2008); Central Australian Cabbage Palm, <i>Livistona mariae</i> subsp. <i>mariae</i>. (draft recovery plan) (Nano 2008); Brush-tailed Mulgara and Crest-tailed Mulgara (SA Department of Environment and Heritage, in prep.); Black-footed Rock Wallaby (WA Department of Environment and Conservation, in prep.).</p> <p><b>Other management plans:</b> 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>
	<b>Monitoring programs and research projects</b>	<p>A vegetation and land unit map for the West MacDonnell Ranges is currently being produced following extensive biophysical survey work in reserves in the area (A. Duguid, NRETAS, pers. comm.).</p> <p>A vegetation map and report on the vegetation and plant species for the Alice Springs municipality has been published (Albrecht and Pitts 2004).</p> <p>A project is currently underway to investigate Indigenous ecological knowledge relating to threatened acacias (NRETAS and Central Land Council).</p> <p>A number of actions identified in the recovery plan for Southern Marsupial Mole (Benshemesh 2004) are being implemented within the ranges by NRETAS and other stakeholders, and similarly for the Endangered Lizard <i>Egernia slateri</i>.</p> <p>Populations of Fat-tailed False Antechinus, Long-tailed Dunnart and Central Rock-rat are being monitored in the West MacDonnell National Park by NRETAS staff.</p> <p>A project is investigating the threatening processes affecting arid floodplain habitat (Biodiversity Conservation Unit NRETAS).</p> <p>A project is investigating the distribution and ecology of the Desert Sand Skipper <i>Croitana aestiva</i> (Biodiversity Conservation Unit NRETAS).</p> <p>Monitoring of the red cabbage palm and MacDonnell Ranges cycad (Threatened Species Unit, NRETAS).</p> <p>Priority weeds such as athel pine, prickly pear and date palm are being mapped and managed around the Finke River by the Tjuwanpa Rangers (W. Dobbie, Central Land Council, pers. comm.). The Tjuwanpa Rangers are also controlling feral horse and pig populations around Ellery Creek and managing fire protect fire sensitive vegetation communities, especially in Palm Valley.</p> <p>Greening Australia has recently been co-ordinating a program of off-reserve conservation initiatives within the site.</p> <p>There are 71 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 <a href="http://www.firenorth.org.au/nafi/app/init.jsp">http://www.firenorth.org.au/nafi/app/init.jsp</a></p>
MANAGEMENT INFORMATION		

	<p><b>Management recommendations</b></p>	<p>Progress nomination of the West MacDonnell National Park for World Heritage Listing (NRETA 2005). In conjunction with landowners and Traditional Owners, develop the West MacDonnell World Heritage Area as a means of linking park development, conservation initiatives and tourism opportunities (NRETA 2005).</p> <p>Resolve the future of the Owen Springs Reserve and the eastern portion of the Alice Valley (NRETA 2005).</p> <p>Implement invasive plant and feral animal management strategies to pro-actively address the major issues of buffel grass, couch grass and horses (NRETA 2005).</p> <p>Investigate and support development of additional community ranger groups to cover the Harts Range, northern Simpson Desert and Dulcie Range area (NRETA 2005).</p> <p>Investigate potential for inclusion of northern Henbury Station within the proposed Greater Central Australian National Park (NRETA 2005).</p> <p>Re-assess past proposals for conservation management and recreational development in the East MacDonnell Ranges involving Management Agreements or acquisition for inclusion of areas within the NT Reserve System (NRETA 2005).</p> <p>Maintain current Management Agreements with landowner for <i>Acacia undoolyana</i> (NRETA 2005).</p> <p>Investigate with landowners, land management / conservation initiative options including a Management Agreement or park acquisition for <i>Acacia undoolyana</i> area (NRETA 2005).</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>KEY REFERENCES</b></p>	<p><b>Papers and reports</b></p>	<p>Albrecht, D. and Pitts, B. (2004). <i>The vegetation and plant species of the Alice Springs Municipality</i>. Greening Australia and DIPE, Alice Springs.</p> <p>Duguid, A., Barnetson, J., Clifford, B., Pavey, C., Albrecht, D., Risler, J. and McNellie, M. (2005). <i>Wetlands in the arid Northern Territory</i>. A report to the Australian Government Department of the Environment and Heritage on the inventory and significance of wetlands in the arid NT. Northern Territory Government Department of Natural Resources, Environment and the Arts. Alice Springs.</p> <p>Scott, B. (1997). Diversity in central Australian land snails (Gastropoda: Pulmonata). <i>Memoirs of the Museum of Victoria</i> 56: 435-439.</p> <p>White, M., Albrecht, D., Duguid, A., Latz, P. and Hamilton, M. (2000). <i>Plant species and sites of botanical significance in the southern bioregions of the Northern Territory; volume 2: significant sites</i>. A report to the Australian Heritage Commission from the Arid Lands Environment Centre. Alice Springs, NT.</p>
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**Ormiston Gorge in the Western MacDonnell Ranges (Photo: Chris Pavey)**