

## Waterhouse Range

### Location and Description

The Waterhouse Range is located approximately 40 km south-west of Alice Springs, and is separated from the MacDonnell Range and Chewings Range to the north by Missionary Plain. The Range is composed of various sandstone geologies, including the porous and water-retaining Mereenie Sandstone, which is associated with the presence of rare and restricted plant taxa. The Hugh River dissects the Range at Lawrence Gorge, and a small area of dune fields lies on the southern side of the Range. Dominant vegetation communities within the Site include spinifex grasslands with an overstorey of low open-woodland, and acacia shrublands with an open-grassland understorey.

### Tenure and Land Use

The Waterhouse Range is almost entirely pastoral leasehold land, encompassed within one pastoral property (Owen Springs). A small portion of the Site is on Aboriginal freehold land held by the Uruna Aboriginal Land Trust. Approximately 90% of the site is managed as a conservation reserve (Owen Springs Reserve) and is used for conservation and tourism.

### Significance Rating

National Significance

### Ecological Values

Waterhouse Range is an important refuge area for four threatened species, including one plant (minnie daisy) and three vertebrate species (Slater's Skink, Black-footed Rock Wallaby and Australian Bustard). Minnie daisy has a restricted range within the Northern Territory. Numerous other plant species found in the Site are endemic to the Northern Territory, or have a restricted range.

### Management Issues

Weeds and invasive exotic plants, especially buffel grass and couch grass, which affect fire regimes and vegetation composition along floodplain habitats, are the major management issue within this Site.

### Condition

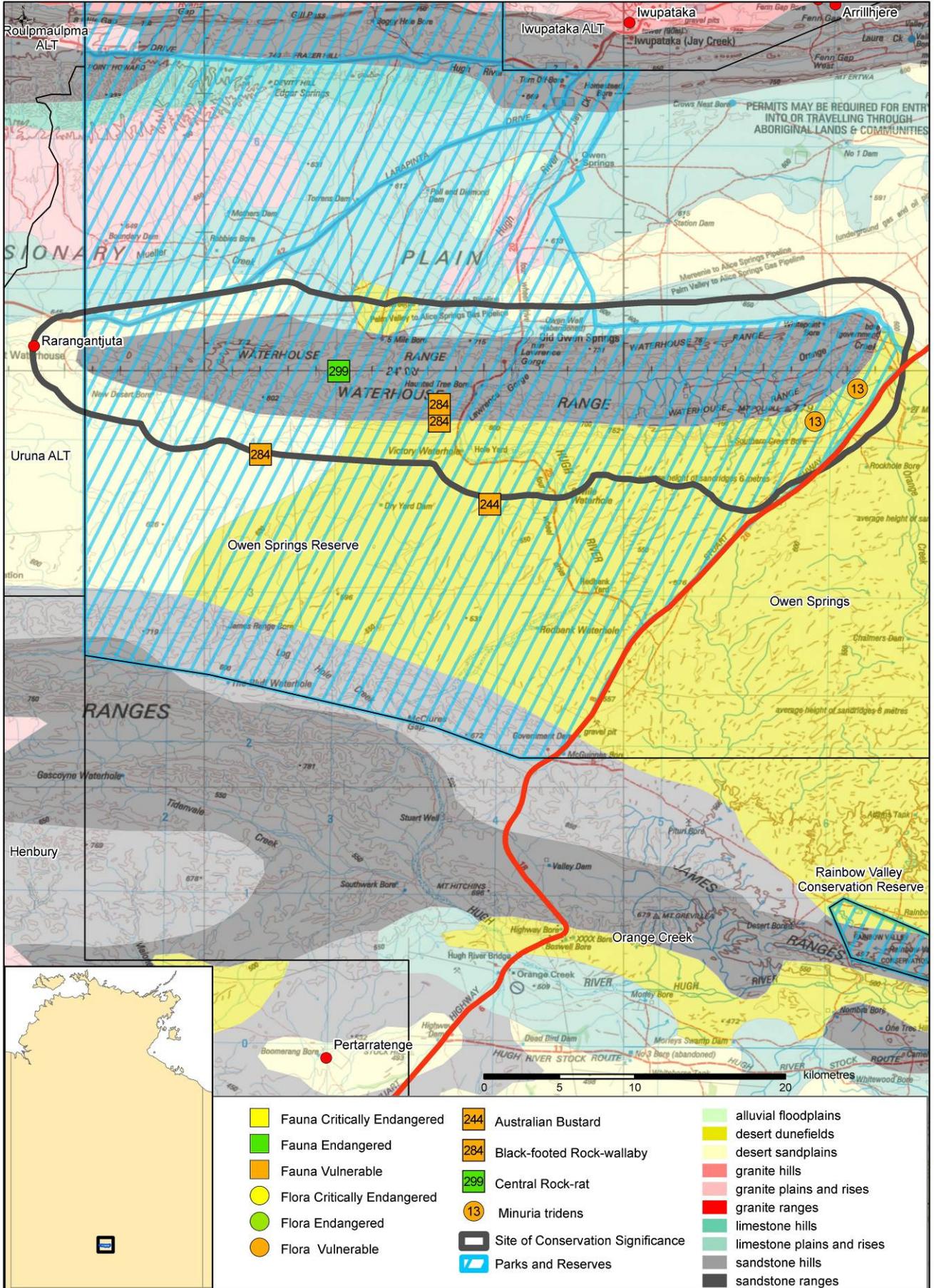
Many areas within the Site show signs of a long history of pastoral use.

### Current Conservation Initiatives

Parks and Wildlife Service NT rangers actively manage weeds, feral animals and fire within Owen Springs Reserve.



WATERHOUSE RANGE SITE OF CONSERVATION SIGNIFICANCE



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LOCATION	<b>SOCS Number</b>	64 (Not listed in the NT Parks and Conservation Masterplan)
	<b>Latitude/Longitude</b>	24° 0' South, 133° 26' East (at centre)
	<b>Bioregion</b>	MacDonnell Ranges (97%), Finke (3%)
	<b>Description</b>	<p>This site encompasses the entire Waterhouse Range. It includes Lawrence Gorge, where the Hugh River passes through the Range, and a small area of desert dunefields immediately south of the Range and has an area of 573 km<sup>2</sup>. The boundary of the site follows that delineated by White <i>et al.</i> (2000) in identifying the Waterhouse Range Site of Botanical Significance, with a 2 km buffer added.</p> <p>Major vegetation communities within the site include hillside spinifex <i>Triodia brizoides</i> hummock grassland with mixed species low open-woodland overstorey; hard spinifex <i>Triodia basedowii</i> or soft spinifex <i>Triodia pungens</i> hummock grassland with blue mallee <i>Eucalyptus gamophylla</i> and acacia tall sparse-shrubland overstorey; and mulga <i>Acacia aneura</i> tall open-shrubland with woollybutt <i>Eragrostis eriopoda</i> open-grassland understorey (White <i>et al.</i> 2000).</p> <p>The Greater MacDonnell Ranges about the site to the north and swing around the west and south. They are also identified as a site of high conservation significance in the NT.</p>
THREATENED SPECIES	<b>Significance Rating</b>	<b>National Significance</b>
	<b>Threatened plants and animals</b> (Listings at National/NT level CR - Critically Endangered, EN - Endangered, VU - Vulnerable, NT - Near Threatened, LC - Least Concern, DD - Data Deficient)	Four threatened species are reported from this site. <b>Plants</b> <ul style="list-style-type: none"> <li>▪ Minnie daisy <i>Minuria tridens</i> (VU/VU)</li> </ul> <b>Vertebrates</b> <ul style="list-style-type: none"> <li>▪ Black-footed Rock Wallaby <i>Petrogale lateralis</i> (VU/NT)</li> <li>▪ Slater's Skink <i>Egernia slateri</i> (EN/EN)</li> <li>▪ Australian Bustard <i>Ardeotis australis</i> (-/VU)</li> </ul> The Central Rock-rat <i>Zyzomys pedunculatus</i> is reported from the site but believed to now be locally extinct.
ENDEMIC SPECIES	<b>Significance Rating</b>	<b>Not Significant</b>
	<b>Notes</b>	<p><b>Endemic to the bioregion:</b> Three plant species found at the site are endemic to the MacDonnell Ranges bioregion (<i>Austrostipa centralis</i>, <i>Eucalyptus lucens</i> and <i>Stenanthemum centrale</i>).</p> <p><b>Endemic to the NT:</b> Seven plant species and five vertebrate species recorded from the site are NT endemics.</p> <p><b>Other:</b> Three plant species recorded from the site are restricted to the MacDonnell Ranges bioregion in the NT but also occur in other states (<i>Lomandra patens</i>, <i>Mirbelia ramulosa</i> and <i>Olearia xerophila</i>).</p> <p>Apart from one unconfirmed record from Western Australia, the threatened Minnie Daisy <i>Minuria tridens</i> is restricted to arid areas of the NT, and is only known from nine locations (Nano and Pavey 2008).</p>
WILDLIFE AGGREGATIONS	<b>Significance Rating</b>	<b>Not Significant</b>
	<b>Marine turtles</b>	Not applicable
	<b>Seabirds</b>	None known
	<b>Waterbirds</b>	There are no significant aggregations of waterbirds reported from the site but intermittent waterholes along the Hugh River can support small populations of waterbirds.
	<b>Shorebirds</b>	None known
	<b>Other aggregations</b>	None known
WETLANDS	<b>Significance Rating</b>	<b>Not Significant</b>
	<b>Ramsar criteria met</b>	Not applicable
	<b>DIWA criteria met</b>	Not applicable
	<b>Notes</b>	There are no significant wetland values reported for the site.
	<b>Rivers</b>	The Hugh River begins its course in the Chewings Ranges, and eventually joins the Finke River upstream of Horseshoe Bend.
FLORA	<b>Significance Rating</b>	<b>Not Significant</b>
	<b>Notes</b>	<p><b>Restricted range species:</b> Three plants reported from the site have restricted ranges in the NT (<i>Acacia basedowii</i>, <i>Minuria tridens</i> and <i>Solanum orbiculatum</i> subsp. <i>macrophyllum</i>).</p> <p><b>Relictual species:</b> Two relictual plants occur at the site (<i>Bulbostylis pyriformis</i> and <i>Lomandra patens</i>).</p>

WATERHOUSE RANGE - SITE OF CONSERVATION SIGNIFICANCE

OTHER ENVIRONMENTAL VALUES		The Waterhouse Range is identified as a Site of Botanical Significance in White <i>et al.</i> (2000).
MANAGEMENT ISSUES		<p><b>Fire:</b> No parts of the site were burnt more than twice in the period 1997-2005. However, uncontrolled wildfire is an issue in combination with the spread of buffel grass. This is leading to changes in the structure and dynamics of vegetation on floodplains, such as along the Hugh River, and may have impacts on threatened species such as Slater's Skink.</p> <p><b>Feral animals:</b> No information located</p> <p><b>Weeds and invasive exotic plants:</b> Bathurst burr <i>Xanthium spinosum</i> (category B weed) is recorded from the site. Buffel grass <i>Cenchrus ciliaris</i> and couch grass <i>Cynodon dactylon</i> are also present and spreading in the site and are likely to negatively affect the fire regime and vegetation composition.</p> <p><b>Other:</b> No information located</p>
MANAGEMENT INFORMATION	<b>NRM groups</b>	No information located.
	<b>Protected areas</b>	Owen Springs Reserve (515 km <sup>2</sup> / 90% of site).
	<b>Current management plans</b>	<p><b>Site-specific plans:</b> No information located.</p> <p><b>National recovery plans for threatened species:</b> Slater's Skink (Pavey 2004); Minnie Daisy (Nano and Pavey 2008); Black-footed Rock Wallaby (WA Department of Environment and Conservation in prep.).</p> <p><b>Other management plans:</b> Australian Weeds Strategy (NRMCC 2007)  <a href="http://www.weeds.gov.au/publications/strategies/weed-strategy.html">http://www.weeds.gov.au/publications/strategies/weed-strategy.html</a></p>
	<b>Monitoring programs and research projects</b>	<p>A collaborative research project is currently investigating the conservation ecology and distribution of the threatened Slater's Skink <i>Egernia slateri</i> at Owen Springs (C. Pavey, NRETAS, pers. comm.). Understanding threatening processes affecting arid floodplain habitat is the focus of a research project currently underway within this site (C. Pavey, NRETAS, pers. comm.).</p> <p>A vegetation mapping project was conducted by NRETAS in the Owen Springs Reserve during 2007-2008.</p> <p>There are two 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>
	<b>Management recommendations</b>	<p>Identify botanical hot spots within the site and determine where control of invasive exotic plants (particularly buffel grass and couch grass) can be most effective.</p> <p>Investigate the extent and spread of white cedar <i>Melia azederach</i> in the Lawrence Gorge area (White <i>et al.</i> 2000).</p>
KEY REFERENCES	<b>Papers and reports</b>	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.
	<b>Contributors</b>	Chris Pavey, Biodiversity Conservation, NRETAS, Alice Springs.