

Dulcie Range and surrounds

Location and Description

The Dulcie Range lies 220 km north-east of Alice Springs and is one of a number of rocky ranges in the southern Northern Territory. The Range is geologically diverse and comprises a colourful sandstone plateau with a series of impressive weathered escarpments. Numerous creeks dissect the plateau and have carved a series of gorges and rock holes which hold permanent and near-permanent water, often supplemented by springs, and provide an important refuge for native plants and animals. The Range is surrounded by low sandstone and limestone hills and is dominated by open eucalypt woodland and acacia shrubland with an understory of spinifex grassland.

Tenure and Land Use

This Site is predominantly pastoral leasehold land and within five pastoral leases (Arapunya, Jinka, Derry Downs, Jervois, and an un-named lease). The remaining portions of the site are Crown lease (Dulcie Range National Park), vacant Crown land and a small area of Aboriginal freehold land. The main land use within the site is pastoral operations, and other uses include tourism and conservation. The nearest community is Atitjere (or Harts Range; population 247), 60 km south-west of the site.

Significance Rating

National Significance

Ecological Values

The Dulcie Range and surrounding hills provide habitat for five threatened species, including two species of Land Snail which are known only from the site. Springs, permanent rockholes and riverine waterholes help to sustain a population of the Black-footed Rock-Wallaby, and provide important habitat and drought refuge for aquatic biota such as fish. Sheltered gorges within the Site protect a number of plants with restricted ranges.

Management Issues

Wildfires, grazing pressure, soil erosion, and the impacts of introduced plant and animal species are the most significant processes affecting the conservation values of this site.

Condition

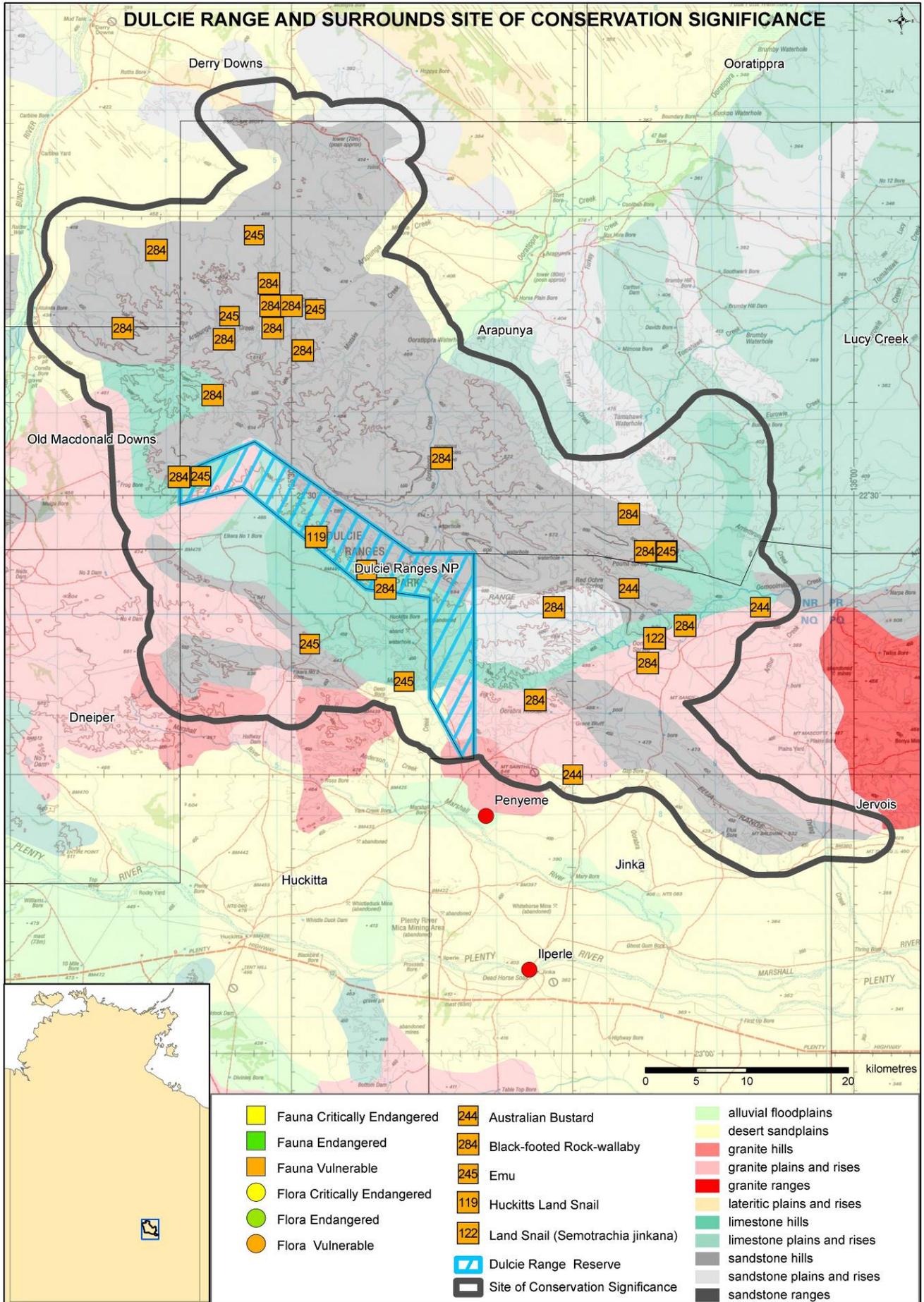
Frequent wildfires have favoured fire-tolerant plant species and contributed to a reduction in plant diversity in the Range. Grazing by feral horse, cattle and donkey have degraded some grasslands and waterholes within the Range.



Current Conservation Initiatives

A draft plan of management has been prepared for the Dulcie Range National Park (2001) which recommends development of a feral animal strategy and fire management strategy for the Park. A number of springs and wetlands within the Dulcie Range National Park have been fenced to exclude cattle and feral herbivores, and *Parkinsonia aculeata* is being controlled in the vicinity of Huckitta Springs.

DULCIE RANGE AND SURROUNDS - SITE OF CONSERVATION SIGNIFICANCE



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LOCATION	SOCS Number	51 (NT Parks and Conservation Masterplan Map Number 78)
	Latitude/Longitude	22 ° 30' South, 135 ° 36 East (at centre)
	Bioregion	Burt Plain (95%) Channel Country (5%)
	Description	<p>This Site includes the Dulcie and Elua sandstone ranges and the surrounding limestone and sandstone hills and rises.</p> <p>The boundary of the Site is delineated based on the Dulcie Range Site of Botanical Significance defined 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. It encompasses an area of 2983 km².</p> <p>Major vegetation communities within the Site include low, open eucalypt woodland and/or acacia shrubland with an understorey of spike flower spinifex <i>Triodia spicata</i> and soft spinifex <i>Triodia pungens</i> hummock grassland (White <i>et al.</i> 2000). Rockholes support fringing rushes, and small creeks and waterholes support river red gums <i>Eucalyptus camaldulensis</i> (Duguid 2005).</p>
THREATENED SPECIES	Significance Rating	National 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>Five threatened species are reported from this site.</p> <p>Vertebrates</p> <ul style="list-style-type: none"> ▪ Australian Bustard <i>Ardeotis australis</i> (-/VU) ▪ Emu <i>Dromaius novaehollandiae</i> (-/VU) ▪ Black-footed Rock-Wallaby <i>Petrogale lateralis</i> (VU/VU) <p>Invertebrates</p> <ul style="list-style-type: none"> ▪ Huckitta Land Snail <i>Semotrachia huckittiana</i> (-/VU) ▪ Land Snail <i>Semotrachia jinkana</i> (-/VU) <p>▪ Huckitta Land Snail has been collected only once from one location (Woinarski <i>et al.</i> 2007), and <i>Semotrachia jinkana</i> is known only from a small area of fig trees below Jinka Spring in this Site (Woinarski <i>et al.</i> 2007).</p>
ENDEMIC SPECIES	Significance Rating	Regional Significance
	Notes	<p>Endemic to the site: Two invertebrate species are entirely restricted to the Dulcie Range (Huckitts Land Snail <i>Semotrachia huckittiana</i> and the Land Snail <i>Semotrachia jinkana</i>) (Woinarski <i>et al.</i> 2007).</p> <p>Endemic to the bioregion: The two species of land snail identified above are known only from the Burt Plain bioregion.</p> <p>Endemic to the NT: Two plant species (<i>Cratystylis centralis</i> and <i>Eremophila christophori</i>) and the two invertebrate species identified above are NT endemics.</p> <p>Other: One plant species is only found in the Burt Plain bioregion within the NT, but is also found in other states (<i>Eremophila dalyana</i>).</p>
WILDLIFE AGGREGATIONS	Significance Rating	Not Significant
	Marine turtles	Not applicable
	Seabirds	None known
	Waterbirds	None known
	Shorebirds	None known
	Other aggregations	None known
WETLANDS	Significance Rating	National Significance (possible International)
	Ramsar criteria met	Springs and waterholes within the Dulcie Range are not listed as a wetland of international significance under the Ramsar Convention, however an assessment by Duguid <i>et al.</i> (2005) found that the waterholes may meet Criteria 1, 3 and 4.
	DIWA criteria met	Springs and waterholes within the Dulcie Range are not listed in the Directory of Important Wetlands in Australia (DIWA), but an assessment by Duguid <i>et al.</i> (2005) found that they meet DIWA Criteria 1 and 3.
	Notes	<p>Permanent and near-permanent water is retained in rocky waterholes within the Dulcie Range, and numerous springs feed small waterholes within the network of gorges (Latz and Langford 1983). The waterholes provide important habitat for wetland biota and are the only example of a concentration of springs, permanent rockholes and riverine waterholes in the Burt Plain Bioregion (Duguid 2005). Gibson <i>et al.</i> (1989) recorded nine gorges within the Range with springs or seepages, and noted rockholes in 15 gorges, but information regarding the volume and reliability of water in the springs is limited (Duguid 2005).</p> <p>The Dulcie Ranges Springs have been nominated as a national High Conservation Value Aquatic Ecosystem (the finalised list of HCVAE will replace the DIWA list), and form a priority HCVAE in the Caring for our Country Business Plan 2009-2010 (Commonwealth of Australia 2008).</p>
Rivers	The upper catchments of the Ooratippra, Oomoolmilla, Oorabra and Yam Creeks are located within the site. Ooratippra, Mistake and Arapunya Creeks are tributaries of the Sandover River, and dissect the main sandstone plateau from the north.	

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FLORA	Significance Rating	Not Significant
	Notes	<p>Restricted range species: Various disjunct wetland and spring-dependent species such as <i>Fimbristylis sieberiana</i>, <i>Schoenus falcatus</i>, <i>Psilotum nudum</i> and <i>Imperata cylindrica</i> occur within this site.</p> <p>Relictual species: The reed <i>Juncus aridicola</i> is a relictual species and has a restricted range within the NT; 91% of NT records of this species are from this site. The plant <i>Poranthera triandra</i> is also a relictual species found at the site.</p>
OTHER ENVIRONMENTAL VALUES		<p>The Dulcie Range is listed on the Register of the National Estate for natural values (Australian Heritage Council).</p> <p>The Dulcie Range is recognised by Morton <i>et al.</i> (1995) as being a significant refuge area for rare and relict plant and invertebrate species.</p> <p>The Dulcie Range springs and waterholes are identified as being significant for biodiversity conservation (Duguid <i>et al.</i> 2005).</p> <p>The Dulcie Range is identified as a Site of Botanical Significance in White <i>et al.</i> (2000).</p> <p>The small amphibious freshwater crab <i>Holthuisana transversa</i> is found in or near waterholes throughout the Dulcie Range (PWCNT 2001).</p> <p>The Dusky Leaf-nosed Bat <i>Hipposideros ater</i> is reported from the site and this is the furthest inland record of any Australian Leaf-nosed Bat (Van Dyck and Strahan 2008).</p> <p>Long lasting spring-fed waterholes within the Site provide an important refuge for fish: three species are known to persist in the Ooratippra Creek catchment (Glassfish <i>Ambassis</i> sp., Spangled Grunter or Perch <i>Leiopotherapon unicolor</i> and Desert Rainbowfish <i>Melanotaenia splendida</i> subsp. <i>tatē</i>) (Duguid 2005).</p> <p>Long-lasting waterholes within the Site support at least 13 waterbird species (Duguid 2005).</p>
		<p>Fire: No parts of the site were burnt more than twice in the period 1997-2005, but large-scale fires do occur in the area. The change in fire regime from small-scale mosaic burning to more intense and extensive fires, partially fuelled by invasive exotic grasses, may have negative impacts on threatened Land Snail species present within the site (Woinarski <i>et al.</i> 2007). Within the national park area, large wildfires are impacting fire-sensitive plants and communities such as those in the rocky gorges, and have caused reduced plant species diversity (PWCNT 2001).</p> <p>Feral animals: Within Dulcie Range National Park, wild horses have degraded grassland areas, waterholes and surrounding vegetation (PWCNT 2001) and feral cattle, donkey and camel are also a problem. Feral cats occur in the Park (PWCNT 2001) but outside the Park, the impact of all these species is unknown.</p> <p>Weeds and invasive exotic plants: <i>Parkinsonia Parkinsonia aculeata</i> (Weed of National Significance) is reported from the Dulcie Range National Park (PWCNT 2001) and Mossman River grass <i>Cenchrus echinatus</i> (category B weed) is also recorded from the site. Buffel grass <i>Cenchrus ciliaris</i> and couch grass <i>Cynodon dactylon</i> have not been collected from the site but the area is poorly surveyed and both are likely to occur and be spreading.</p> <p>Other: Grazing by cattle has degraded native grasslands and waterholes within the national park (PWCNT 2001). Soil erosion, caused by the impacts of grazing animals and inappropriate fire regimes, is a management concern in some parts of the Site (PWCNT 2001).</p>
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MANAGEMENT INFORMATION	NRM groups	No information located.
	Protected areas	Dulcie Range National Park (191 km ² / 6% of site).
	Current management plans	<p>Site-specific plans: Dulcie Range Draft Plan of Management (PWCNT 2001).</p> <p>National recovery plans for threatened species: Black-footed Rock Wallaby (WA Department of Environment and Conservation, in prep.).</p> <p>Other management plans: Australian Weeds Strategy (NRMCC 2007); Threat Abatement Plan for Predation by Feral Cats (Environment Australia 1999).</p>
	Monitoring programs and research projects	<p>A biological survey of the Dulcie Range was conducted in 1983 (Latz and Langford 1983).</p> <p>There are seven 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>Survey and map weeds, in particular <i>Parkinsonia aculeata</i> and buffel grass, in riverine habitats within the Site (G. Horne, NRETAS, pers. comm.).</p> <p>Conduct further surveys of flora and fauna within the Site to assess the impact of wildfire on vegetation communities and threatened species (G. Horne, NRETAS, pers. comm.).</p> <p>Expand conservation management works around biologically important springs and waterholes to include those that lie outside the Dulcie Range National Park (A. Duguid, NRETAS, pers. comm.).</p> <p>Investigate and support development of an additional community ranger group in the Dulcie Range area (NRETA 2005).</p> <p>Survey invertebrates and other aquatic species in waterholes within the Site (A. Duguid, NRETAS, pers. comm.).</p> <p>In conjunction with the landowners and Traditional Owners, develop and implement land management options that will ensure conservation of the biodiversity and cultural values of the Dulcie Range, including possible extension of the National Park and establishment of a Living Area (NRETA 2005).</p>

KEY REFERENCES	Papers and reports	Gibson, D.F., Kube, P.D., Ginns, A.J., Cole J.R. and Parsons, D.J. (1989). <i>A Resource Survey of the Dulcie Range, Northern Territory</i> . Conservation Commission of the Northern Territory, Alice Springs, NT. Latz, P.K. and Langford, D.G. (1983). <i>A biological Survey of the Dulcie Range, Northern Territory</i> . Internal Report. Wildlife Conservation Section, Alice Springs. Conservation Commission of the Northern Territory, NT. Parks and Wildlife Commission of the Northern Territory (2001). <i>Dulcie Range National Park Draft Plan of Management</i> . Northern Territory Government, Alice Springs NT. http://www.nt.gov.au/nreta/parks/manage/plans/pdf/dulcie_range_pom.pdf
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A spring-fed waterhole in the Dulcie Ranges (Photo: Jeff Cole)



The restricted range fern *Imperata cylindrica* is found in the Dulcie Ranges (Photo: Chris Brock)