



Darwin Coastal bioregion

Description

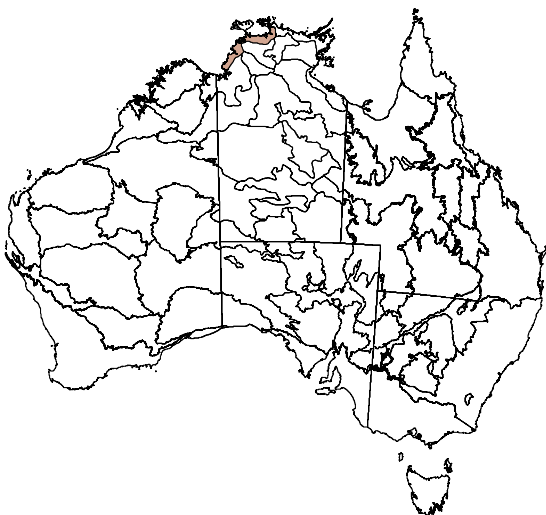
Area: 27 800 km²

The Darwin Coastal bioregion is generally flat, low-lying country, drained by several large rivers. Vegetation communities include eucalypt forest and woodlands with tussock and hummock grass understorey. Land use is mixed, with urban development around Darwin, Aboriginal land, pastoral leases and conservation reserves. Major population centres are Darwin and Palmerston.

Location

The Darwin Coastal bioregion is located on the western coastline of the Northern Territory (see Figure 1).

Figure 1 Location of the Darwin Coastal bioregion



Data sources available

Site-based monitoring data are not available.

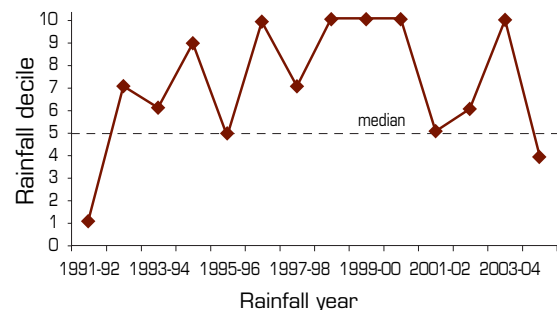
Other datasets include:

- domestic stocking density, which provides moderate reliability for reporting change
- fire extent, intensity and frequency, which provides high reliability
- dust
- distance from water
- distribution and relative abundance of invasive animals and weeds
- land use.

Climate

The Darwin Coastal bioregion has a tropical monsoonal climate with a distinct wet and dry season and high temperatures throughout the year. Spatially averaged median (1890–2005) rainfall is 1384 mm (April to March rainfall year; see Figure 2).

Figure 2 Decile rainfall for the period 1991–1992 to 2004–2005



Annual rainfall is for the 12-month period 1 April to 31 March.



Seasonal quality based on decile rainfall was above average for the majority of the reporting period. The year 1991–1992 was a notably dry year, and there were very wet years in 1996–1997, 1998–1999 to 2000–2001 and 2003–2004.

The relatively small size of this bioregion means that regional averaging of rainfall is less likely to conceal spatial variability compared with other bioregions.

Landscape function

There are no suitable data for reporting change in landscape function.

Sustainable management

Critical stock forage

There are no suitable data for reporting change in critical stock forage.

Plant species richness

There are no suitable data for reporting change in plant species richness.

Change in woody cover

Based on the Australian Greenhouse Office definition and mapping of forest extent¹, forest cover increased from 47.97% in 1991 to 54.21% in 2004 (increase in forested area of 6.24%). There is complete coverage of Landsat imagery in reporting this result.

Distance from stock water

Based on the locations of stock waterpoints sourced from Geoscience Australia's GEODATA TOPO 250K vector product (Series 3, June 2006), 1.3% of the Darwin Coastal bioregion (and Darwin Coastal sub-**Interim Biogeographic Regionalisation for Australia (IBRA)**) is within three kilometres of permanent and semi-permanent sources of stock water. Much of the coastal fringe from the boundary of Kakadu National Park to beyond the mouth of the Daly River is now grazed.

This analysis does not include the locations of natural waters, which in this bioregion provide many sources of water for stock, particularly in the early dry season.

It is not possible to report change in watered area for the 1992–2005 period.

Weeds

Weeds known to occur in the Darwin Coastal bioregion include:

Common name	Scientific name
<i>Barleria prionitis</i>	<i>Barleria prionitis</i>
Bellyache bush	<i>Jatropha gossypifolia</i>
Chinee apple	<i>Zizyphus mauritiana</i>
Creeping lantana	<i>Lantana montevidensis</i>
Grader grass	<i>Themeda quadrivalvis</i>
Hymenachne	<i>Hymenachne amplexicaulis</i>
Hyptis	<i>Hyptis suaveolens</i>
Lantana	<i>Lantana camara</i>
Mesquite	<i>Prosopis</i> spp.
Mimosa	<i>Mimosa pigra</i>
Mission grass	<i>Pennisetum polystachion</i>
Noogoora burr	<i>Xanthium occidentale</i>
Parkinsonia	<i>Parkinsonia aculeata</i>
Pond apple	<i>Annona glabra</i>
Salvinia molesta	<i>Salvinia molesta</i>
Sicklepod	<i>Senna obtusifolia</i> and <i>S. tora</i>
<i>Sida</i> spp.	<i>Sida</i> spp.
Snake weed	<i>Stachylarpheta</i> spp.

See www.anra.gov.au for distribution maps

Components of total grazing pressure

Domestic stocking density

Data from the Australian Bureau of Statistics lack sufficient reliability to report change in domestic stocking density. Herd numbers have increased in recent years as a result of increased infrastructure development, good seasons and better markets associated with live export to Southeast Asia.

Kangaroos

There are no suitable data for reporting change in kangaroo populations.

¹ See <http://www.greenhouse.gov.au/ncas/reports/tech09.html>

Invasive animals

Invasive animal species known to occur in the Darwin Coastal bioregion include:

Common name	Scientific name
Feral pig	<i>Sus scrofa</i>
Wild dog	<i>Canis spp.</i>
Feral cat	<i>Felis catus</i>
Cane toad	<i>Bufo marinus</i>
Water buffalo	<i>Bubalus bubalis</i>
Horse	<i>Equus caballus</i>

See www.anra.gov.au for distribution maps

Products that support reporting of landscape function and sustainable management

Fire

Substantial areas of the Darwin Coastal bioregion burnt in the period 1997 to 2004. Fire was less extensive in 2005, possibly due to lower wet season rainfall (see Figure 2, above).

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005
% area burnt	37.4	38.4	44.0	29.9	32.1	47.4	37.7	21.6	14.3

Approximately equal areas burnt in the early and late dry seasons in 1997, 2000, 2003 and 2004 (early dry-season fires inferred to be less intense than late dry-season fires). Early burns were more extensive in 1998, 1999, 2002 and 2005. A larger area burnt in the late dry season in 2001.

The frequency of fire during the reporting period was relatively high compared with other bioregions, with a mean frequency (\log_{10} transformed) of 0.55.

Dust

The mean Dust Storm Index value (1992–2005) was 0.82, which is a low value compared with all rangeland bioregions. Dust levels were low in the centre of the bioregion and negligible elsewhere.

Biodiversity

Biodiversity characteristics of the Darwin Coastal bioregion include the following:

- By 2004, more than 15% of the bioregion was protected (Collaborative Australian Protected Areas Database, Biodiversity Working Group indicator: Protected areas; see **Section 7 of Chapter 3** of *Rangelands 2008 — Taking the Pulse*).
- By 2005, there were 330 bird species, 82 mammal species and 135 reptile species recorded (Biodiversity Working Group indicator: Fauna surveys).
- By 2005, there were approximately 2200 plant taxa recorded (Biodiversity Working Group indicator: Flora surveys).

In this bioregion, there are (Biodiversity Working Group indicator: Threatened species):

- 5 threatened mammal species
- 2 threatened plant species
- 7 threatened bird species
- 7 threatened reptile species
- 3 threatened fish species.

The bioregion also contains Ramsar-listed wetlands (Biodiversity Working Group indicator: Wetlands).

Socioeconomic characteristics

Land use and value

Approximately 24% of the Darwin Coastal bioregion is grazed. This area has not changed appreciably over the 1992–2005 reporting period.

Key management issues and features

A major regional issue of the Darwin Coastal bioregion is increased weed infestations, particularly *Mimosa pigra*. Most properties are involved in extensive weed-management programs. One major project undertaken by a landholder (which has cost more than \$1 million each year on *Mimosa pigra*) has reduced the occurrence of this weed.