



# Arnhem Plateau bioregion

## Description

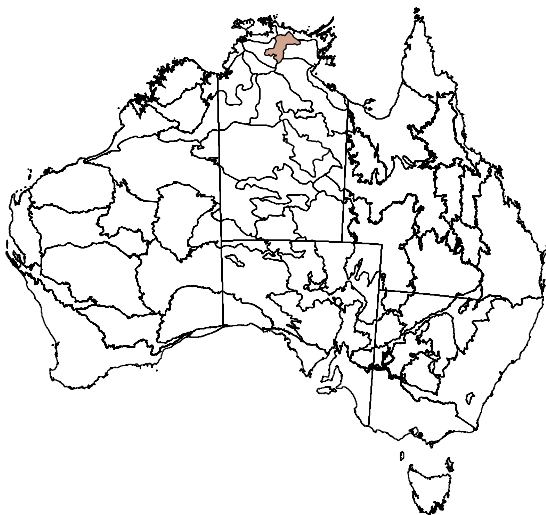
Area: 23 060 km<sup>2</sup>

The Arnhem Plateau bioregion is characterised by hilly to rugged terrain with shallow, stony soils. The vegetation is a mix of sandstone heathlands and rainforests, hummock grasslands and woodlands. Land use is mostly Aboriginal land, but also includes Kakadu National Park. There are a number of smaller Aboriginal communities but no main population centres.

## Location

The Arnhem Plateau bioregion is located in the top end of the Northern Territory (see Figure 1).

**Figure 1 Location of the Arnhem Plateau bioregion**



## Data sources available

Site-based monitoring data are not available.

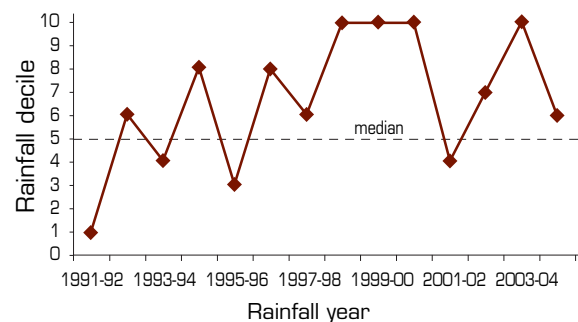
Other datasets include:

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

## Climate

The Arnhem Plateau bioregion has a tropical monsoon climate, with most rain falling in the wet season between November and March. Spatially averaged median (1890–2005) rainfall is 1180 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 variable, but generally average to above average. The year 1991–92 was notably dry, and the period from 1998–1999 to 2000–2001 and 2003–2004 was exceptionally wet.

The intense nature of monsoonal rainfall probably means that the spatially averaged rainfall reported here conceals local variability across the Arnhem Plateau bioregion.

## 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 extent<sup>1</sup>, forest covered 21.71% of the bioregion in 1991, increasing to 22.27% in 2004 (an increase of 0.56%). There is complete coverage of Landsat imagery for reporting this result.

### Distance from stock water

Only 2% of the Arnhem Plateau bioregion is held under pastoral tenure, and stock water (other than natural sources) is unlikely to be present. Distance from stock water has not been calculated.

## Weeds

Weeds known to occur in the Arnhem Plateau bioregion include:

Common name	Scientific name
Hyptis	<i>Hyptis suaveolens</i>
<i>Salvinia molesta</i>	<i>Salvinia molesta</i>
Sicklepod	<i>Senna obtusifolia</i> and <i>S. tora</i>

See [www.anra.gov.au](http://www.anra.gov.au) for distribution maps

## Components of total grazing pressure

### Domestic stocking density

With 2% of the bioregion pastorally occupied, data from the Australian Bureau of Statistics do not reliably indicate changes in stocking density.

### Kangaroos

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

### Invasive animals

Invasive animal species known to occur in the Arnhem Plateau bioregion include:

Common name	Scientific name
Horse	<i>Equus caballus</i>
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>

See [www.anra.gov.au](http://www.anra.gov.au) for distribution maps

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

## Products that support reporting of landscape function and sustainable management

### Fire

As elsewhere in northern Australia, extensive fire is a feature of the Arnhem Plateau bioregion. The annual area burnt between 1997 and 2005 varied considerably. Exceptionally wet seasons were followed by extensive fires in 1999, 2001 and 2004. The relatively smaller area burnt in 2005 may have resulted from very extensive fires the previous year and average *seasonal quality* (ie reduced pasture growth and fuel availability).

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005
% area burnt	15.6	19.0	43.7	17.7	40.4	29.0	12.5	59.5	10.0

The area burnt in late dry-season fires (occurring between August and December) was much more extensive than early dry-season fires in 1999, 2001 and 2004 (by a factor of 11 in 2004). Late dry season fires are presumed to be more intense. At other times, the difference was less marked; approximately double the area burnt in the late dry season (apart from 2002 and 2005 when approximately equal areas were burnt in early and late dry seasons). The frequency of fire during the reporting period was moderate compared with all rangeland bioregions, with a mean frequency ( $\log_{10}$  transformed) of 0.42.

### Dust

The mean Dust Storm Index value (1992–2005) was 0.51, which is low among all rangeland bioregions. Dust levels were low in the far south of the Arnhem Plateau bioregion and negligible elsewhere.

## Biodiversity

Notable features of the Arnhem Plateau bioregion are:

- By 2004, more than 15% of the bioregion area was within Protected Areas (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 227 bird species recorded (Biodiversity Working Group indicator: Fauna surveys).
- By 2005, there were 1900 plant taxa recorded, and a comprehensive program to monitor vegetation structural and floristic change was implemented within Kakadu National Park (Biodiversity Working Group indicator: Flora surveys).
- There has been a relatively large amount of fauna survey work in parts of this bioregion, and a monitoring program for vertebrate fauna has been implemented within Kakadu National Park (Biodiversity Working Group indicator: Fauna surveys).
- Threatened species include 4 plants, 5 mammals, 5 birds, 1 reptile and 1 fish species.

## Socioeconomic characteristics

### Land use and value

Only 2% of the Arnhem Plateau bioregion is held under pastoral tenure. This area has not changed significantly over the 1992–2005 reporting period.

## Key management issues and features

Key features and issues of the Arnhem Plateau bioregion are:

- the control and management of fire activity within the bioregion, particularly the intensity and frequency of late dry-season burns
- invasive animal control programs, which are implemented opportunistically on conservation areas and reserves but are not sufficiently coordinated to extend to Aboriginal or pastorally managed lands.