



Sturt Plateau bioregion

Description

Area: 98 575 km²

The Sturt Plateau bioregion comprises flat to gently undulating plains with little local relief. The vegetation is mainly eucalypt forests and woodlands dominated by bloodwoods over perennial grasses. The main land use and industry is cattle grazing. Major population centres are Larrimah and Daly Waters.

Location

The Sturt Plateau bioregion is located in the central Northern Territory (NT; see Figures 1 and 2).

Figure 1 Location of the Sturt Plateau bioregion

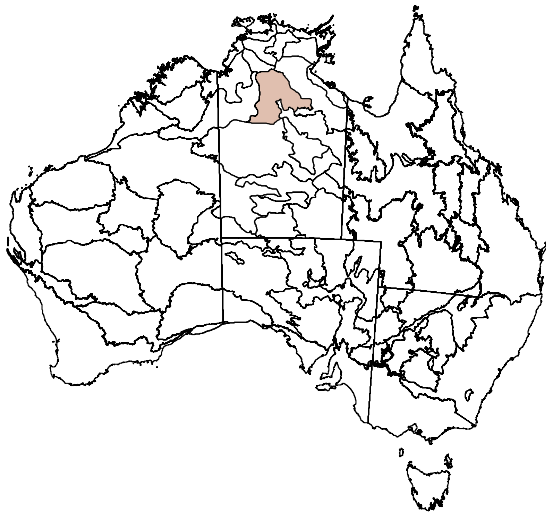
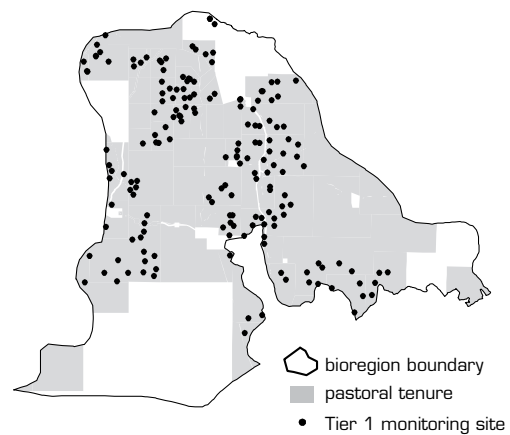


Figure 2 Monitoring sites and pastoral tenure



Data sources available

Data sources include:

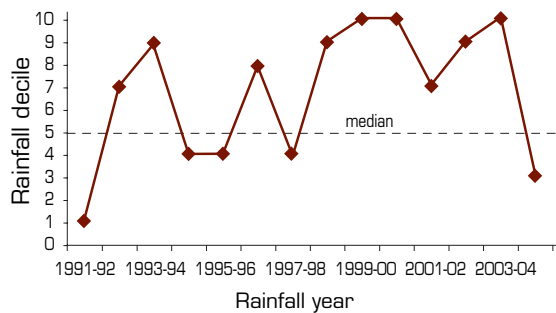
- NT Tier 1, which provides moderate reliability for reporting change, with a moderate number of sites, although these have a patchy distribution, estimated (rather than quantitative) data, and a focus on perennial herbage species
- domestic stocking density, which provides moderate reliability
- fire extent, intensity and frequency, which provides high reliability
- dust
- distance from water
- distribution and relative abundance of invasive animals and weeds
- land values.



Climate

The climate of the Sturt Plateau is dry and monsoonal. Almost all rainfall is between November and March. Spatially averaged median (1890–2005) rainfall is 556 mm (April to March rainfall year; see Figure 3).

Figure 3 Decile rainfall for the period 1991–1992 to 2004–2005



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

Decile rainfall was variable, but generally above the median, throughout the reporting period. The year 1991–1992 was particularly dry while 1999–2000 and 2000–2001 were exceptionally wet years.

Note that regional averaging of rainfall conceals spatial variability. Some parts of the Sturt Plateau bioregion may have experienced better *seasonal quality* and others worse during the 1992–2005 period.

Landscape function

Index based on composition (by biomass) and cover of perennial herbage species

When *seasonal quality* was above average, 6% of sites showed a decline in the index of landscape function. It is not possible to report change following below-average *seasonal quality*.

<i>Seasonal quality</i>	Number of sites	Percentage of reassessed sites showing:		
		Decline: > 3 decrease in index	No change	Increase: > 3 increase in index
Above average	167	6%	75%	19%
Average	12	17%	75%	8%
Below average	n/a	n/a	n/a	n/a

Sustainable management

Critical stock forage

When *seasonal quality* was above average, 8% of sites showed a decline in composition (by biomass) of **palatable perennial** (2P) grasses. It is not possible to report change following below-average *seasonal quality*.

<i>Seasonal quality</i>	Number of sites	Percentage of reassessed sites showing:		
		Decline: > 20% decrease in 2P grasses	No change	Increase: > 20% increase in 2P grasses
Above average	171	8%	67%	25%
Average	12	0%	92%	8%
Below average	n/a	n/a	n/a	n/a

Plant species richness

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

Change in woody cover

Forest extent is negligible based on the Australian Greenhouse Office definition and mapping.¹ Forest covered 0.04% of the bioregion area in 1991 and 0.05% in 2004. There was good coverage of Landsat data available to report this result (more than 90% coverage for the bioregion).

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

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), the percentage of sub-**Interim Biogeographic Regionalisation for Australia (IBRA)** area within three kilometres of permanent and semipermanent sources of stock water is:

Sturt Plateau P1 (STU1)	0.7% (whole sub-IBRA area analysed)
Sturt Plateau P2 (STU2)	7.0% (whole sub-IBRA area analysed)
Sturt Plateau P3 (STU3)	6.4% (whole sub-IBRA area analysed)

IBRA = Interim Biogeographic Regionalisation for Australia;
STU = Sturt Plateau

This analysis does not include the locations of natural waters, which can provide additional 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 Sturt Plateau bioregion include:

Common name	Scientific name
Bellyache bush	<i>Jatropha gossypifolia</i>
Chinee apple	<i>Zizyphus mauritiana</i>
Grader grass	<i>Themeda quadrivalvis</i>
Hyptis	<i>Hyptis suaveolens</i>
Mission grass	<i>Pennisetum polystachion</i>
Noogoora burr	<i>Xanthium occidentale</i>
Parkinsonia	<i>Parkinsonia aculeata</i>
Prickly acacia	<i>Acacia nilotica</i> subsp. <i>indica</i>
Sicklepod	<i>Senna obtusifolia</i> and <i>S. tora</i>
<i>Sida</i> spp.	<i>Sida</i> spp.

See www.anra.gov.au for distribution maps

Components of total grazing pressure

Domestic stocking density

Approximately 77% of the Sturt Plateau bioregion is grazed. Data from the Australian Bureau of Statistics showed that domestic stocking density increased from a level near the 1983–1991 average in 1993 to be 36% above this base in 1997. This (approximate) density was maintained until 2000 and stocking density then increased again in 2001 and 2002 to be 45% above the 1983–1991 average. In both 2003 and 2004, stocking density was 37% above the 1983–1991 base. This large increase in stocking density was probably helped by some better seasons but also continued through some seasons of average *seasonal quality*. Apart from these better seasons, the increase was also driven by land use intensification in the bioregion. Note that spatial averaging conceals likely variation in stocking density trends across the bioregion.

Kangaroos

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

Invasive animals

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

Common name	Scientific name
Feral pig	<i>Sus scrofa</i>
Wild dog	<i>Canis</i> spp.
Feral cat	<i>Felis catus</i>
Cane toad	<i>Bufo marinus</i>
Camel	<i>Camelus dromedaries</i>
Horse	<i>Equus caballus</i>

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Products that support reporting of landscape function and sustainable management

Fire

Fire was very extensive in 2001 and 2004 during wetter periods (see Figure 3, of rainfall deciles, above). Relatively large areas were burnt in other years between 1998 and 2003. Largest areas within years were burnt between August and December (late dry season) when fires were likely more intense.

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005
% area burnt	7.9	13.2	41.4	20.2	61.1	27.0	18.2	63.7	2.1

The frequency of fire between 1997 and 2005 was relatively high, with a mean frequency (\log_{10} transformed) of 0.44.

Dust

Dust was insignificant; the mean Dust Storm Index value (1992–2005) of 0.47 was the equal lowest value of all bioregions.

Biodiversity

In the Sturt Plateau bioregion, there are (Biodiversity Working Group indicator: Threatened species; see **Section 7 of Chapter 3** of *Rangelands 2008* — *Taking the Pulse*):

- no threatened plant species
- 5 threatened mammal species
- 5 threatened bird species
- no threatened reptile, amphibian, fish or invertebrate species.

Socioeconomic characteristics

Land use and value

Approximately 77% of the Sturt Plateau bioregion is grazed. This area has not changed appreciably over the 1992–2005 reporting period.

The unimproved land value of pastoral leases increased by 45% between 1991 and 2003 — the largest increase of all pastorally significant bioregions in the NT.

Key management issues and features

Key features and issues of the Sturt Plateau bioregion include the following:

- Weeds spreading along and away from the new Alice Springs–Darwin railway corridor have introduced a new threat to the bioregion.
- Further development of infrastructure across the Sturt Plateau has led to:
 - opening up of new areas with the use of polythene pipe and tanks to reticulate stock water and better distribute grazing
 - strategic location of waterpoints
 - a reduced number and intensity of wildfires.