



Cape York Peninsula bioregion

Description

Area: 121 100 km²

The Cape York Peninsula bioregion has north-trending ranges, which are surrounded by foothills and broad alluvial plains of low relief. The vegetation of the bioregion is predominantly eucalypt and melaleuca woodlands with Darwin stringybark as the dominant species. Rainforest is present along the east coast. Approximately half of the bioregion is used for pastoralism. Other tenures include Aboriginal land and national parks, and other land uses are bauxite and silica mining, nature reserves, tourism and fishing. Major population centres are Weipa, Cooktown and Aurukun.

Location

The Cape York Peninsula bioregion is located on the northern tip of Queensland (see Figures 1 and 2).

Figure 1 Location of the Cape York Peninsula bioregion

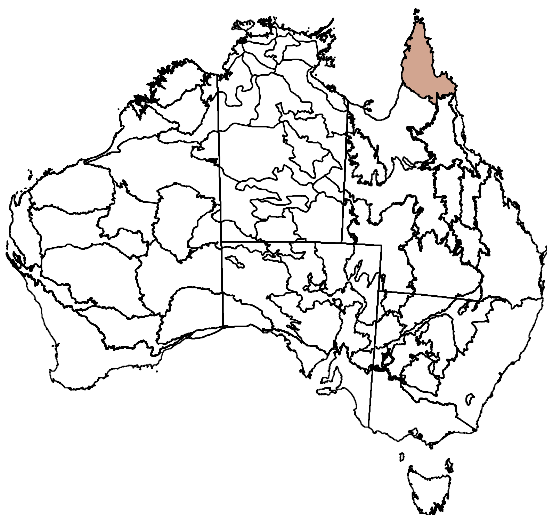
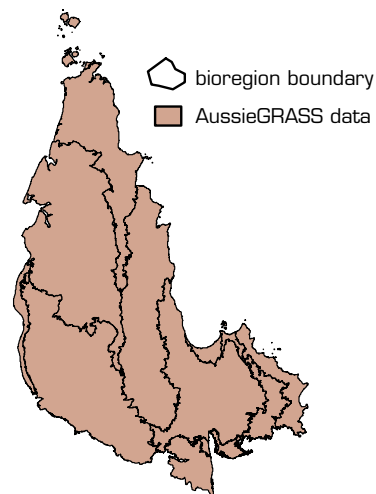


Figure 2 Monitoring data coverage



Data sources available

Data sources include:

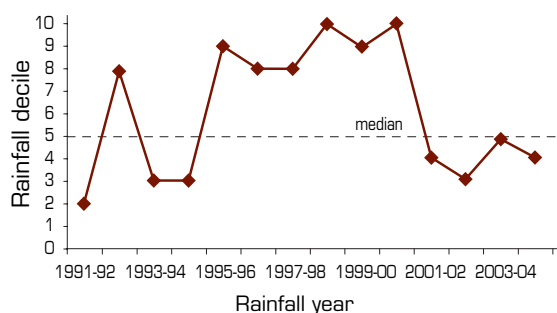
- **AussieGRASS** simulation (of pasture growth and utilisation) and remote sensing (**Multiple Regression Bare Ground Index, version bi1**), both of which provide low to moderate reliability for reporting change (data available for the entire rangelands, AussieGRASS provides simulated results with some ground validation rather than direct measurement or observation)
- 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
- land values.



Climate

The Cape York Peninsula bioregion has hot and humid wet seasons with higher rainfall reliability than most rangeland bioregions. Spatially averaged median (1890–2005) rainfall is 1284 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 well above the median from 1995–1996 to 2000–2001. There were some drier years at the start and end of the reporting period but no serious droughts.

The intense nature of monsoonal and cyclonic rainfall probably means that the spatially averaged rainfall reported here conceals local variability across the Cape York Peninsula bioregion.

Landscape function

AussieGRASS simulation suggests no change in landscape function for any of the sub-**Interim Biogeographic Regionalisations for Australia (IBRA)** in this bioregion.

Sustainable management

Critical stock forage

AussieGRASS, levels of simulated pasture utilisation and change

For the years 1976–1990 compared with 1991–2005, the spatially averaged utilisation in this IBRA is low (generally less than 10%) and is constrained by the

poor quality of available pasture. Changes in pasture utilisation between 1976–1990 and 1991–2005 were estimated at less than 2% (in absolute terms) for all sub-IBRAs.

Plant species richness

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

Change in woody cover

Statewide Landcover and Trees Study (SLATS) reporting

Most sub-IBRAs have high levels of woody cover (six of the nine have greater than 90% woody cover). More 'open' sub-IBRAs include Cape York — Torres Strait and Coastal Plains (47.9% and 63.2% woody cover respectively in 2003). There was minimal change in woody cover (less than 1%) between 1991 and 2003. There is high reliability for reporting change in woody cover:

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), five sub-IBRAs have 5% or less of their total area within three kilometres of permanent and semipermanent sources of stock water. Sub-IBRAs with a greater percentage of their area within three kilometres of stock waters include:

Cape York — Torres Strait (CYP3)	18.3%
Starke Coastal Lowlands (CYP2)	10.8%
Coastal Plains (CYP9)	6.6%

CYP = Cape York Peninsula

For much of the year, surface water is abundant and local grazing pressure can be temporarily high as animals are confined to parts of the landscape where there is no flooding. Conversely, in the dry season, grazing pressure around wetlands can become very high as stock seek green forage around the retreating waters.

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

Weeds

Weeds known to occur in the Cape York Peninsula bioregion include:

Common name	Scientific name
Bellyache bush	<i>Jatropha gossypifolia</i>
Blue thunbergia	<i>Thunbergia grandiflora</i>
Calotrope	<i>Calotropis procera</i>
Cats claw creeper	<i>Macfadyena unguis-cati</i>
Chinee apple	<i>Zizyphus mauritiana</i>
Creeping lantana	<i>Lantana montevidensis</i>
Giant rats tail grass	<i>Sporobolus natalensis</i> and <i>S. pyramidalis</i>
Hymenachne	<i>Hymenachne amplexicaulis</i>
Lantana	<i>Lantana camara</i>
Laurel clock vine	<i>Thunbergia laurifolia</i>
Parkinsonia	<i>Parkinsonia aculeata</i>
Parthenium weed	<i>Parthenium hysterophorus</i>
Pond apple	<i>Annona glabra</i>
Rubber vine	<i>Cryptostegia grandiflora</i>
Sicklepod	<i>Senna obtusifolia</i> and <i>S. tora</i>
Tobacco weed	<i>Elephantopus mollis</i>

See www.anra.gov.au for distribution maps

Components of total grazing pressure

Domestic stocking density

Approximately 40% of the Cape York Peninsula bioregion is pastorally occupied. Based on data sourced from the Australian Bureau of Statistics, stocking density was generally below the 1983–1991 average throughout the 1992–2004 period. Lowest densities occurred in 1992 (92% of the base), 1996 (87% of base) and 2001 (81% of base). These changes were unrelated to *seasonal quality* as indicated by decile rainfall and are mostly due to changes in land use from pastoral to informal conservation or indigenous tenure. 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 Cape York Peninsula bioregion include:

Common name	Scientific name
Feral pig	<i>Sus scrofa</i>
Feral goat	<i>Capri hircus</i>
Wild dog	<i>Canis spp.</i>
Feral cat	<i>Felis catus</i>
Starling	<i>Sturnus vulgaris</i>
Cane toad	<i>Bufo marinus</i>
Deer	<i>Cervidae</i> family

See www.anra.gov.au for distribution maps

Products that support reporting of landscape function and sustainable management

Fire

Fire was a regular feature, with between 13.4% and 33.4% of the bioregion burnt each year between 1997 and 2005. The largest areas were burnt in the August–December period in all years; these fires are usually more intense than fires earlier in the year. This is often the intention in an attempt to control woody thickening and some weeds such as rubber vine.

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005
% area burnt	29.3	13.4	25.9	17.0	33.4	24.1	33.2	29.5	14.5

The frequency of fire between 1997 and 2005 was relatively high, with a mean frequency (\log_{10} transformed) of 0.45.

Dust

The mean Dust Storm Index value (1992–2005) was 1.28 — a low value among all rangeland bioregions. Reported dust levels were moderate in the centre and northeast of the bioregion, declining to low in the south and negligible in the west.

Biodiversity

In Queensland, regional ecosystems are defined by Sattler and Williams (1999) as vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil. Descriptions of regional ecosystems can be sourced from the Regional Ecosystem Description Database.¹

A relatively large number of regional ecosystems (222) have been described for this bioregion. Under the *Queensland Vegetation Management Act 1999*, one of these is listed as 'Endangered', and 97 are listed as 'of concern'. Fifteen of the listed regional ecosystems are poorly represented in the reserve system, with less than 4% of the pre-clear extent of each currently reserved (Accad et al 2006).

With regard to the Biodiversity Working Group indicator: Threatened species (see **Section 7 of Chapter 3** of *Rangelands 2008 — Taking the Pulse*), there are:

- 45 threatened plant species
- 7 threatened mammal species
- 8 threatened bird species
- 2 threatened reptile species
- no threatened amphibian or fish species.

Socioeconomic characteristics

Land use and value

Just under half (40%) of the Cape York Peninsula bioregion is grazed. This area has not changed appreciably over the 1992–2005 reporting period.

Unimproved rangeland values as at June 2006 were, on average, \$11 731 ± \$2477/km² (values expressed in 2005 dollars). There was a large range in average unimproved value across sub-IBRAs (\$420 to \$34 234/km²). It is not possible to report change in land values for the 1992–2005 period.

Key management issues and features

Key features and issues of the Cape York Peninsula bioregion are:

- woodland thickening in some areas
- increasing feral animals (particularly pigs)
- changes in fire regime in some areas
- change in land use from predominately low-intensity pastoralism to significant areas under conservation and Indigenous tenure.

¹ See http://www.epa.qld.gov.au/nature_conservation/biodiversity/regional_ecosystems/how_to_download_REDD/