



# factsheet



## Climate Change – potential impacts and costs

### Northern Territory (NT)

#### Snapshot

The NT is the least populous of Australia's states and territories, home to 1 per cent of Australia's population. Of the 230,000 people living in the NT, the majority of people live in Darwin. There are numerous remote settlements and approximately 31 per cent of all Indigenous Australians live in the NT.

The NT has two distinct climate zones. The Top End, including Darwin, has a tropical climate with high humidity and two seasons, the wet season (November to April) and the dry season (May to October). By contrast, the central region of the Territory, including Alice Springs and the Uluru National Park, is semi-arid.

Projected changes in climate conditions may affect natural systems and human settlements in the NT. The following information highlights potential impacts and costs to the NT's industries, environment and people from climate change.

#### Coastal Zone

Climate change will lead to sea level rise and potentially greater storm surges which will impact on coastal settlements, infrastructure and ecosystems. Between 260 and 370 residential buildings, with a current value of between \$100 million and \$134 million may be at risk of inundation from a sea level rise of 1.1 metres. A 1.1 metre sea level rise will also put 2,045km of the NT's roads, up to 24 commercial buildings and 32km of railways at risk. These assets have an estimated

value of up to \$1.8 billion, \$500 million and \$100 million respectively.

Darwin is particularly vulnerable to riverine flooding and more intense cyclonic activity. Impacts on infrastructure are expected to be extreme under a 'business as usual' climate scenario, including major threats to vital port infrastructure on the NT coast.

Global sea levels increased by 1.7 mm per year over the 20th century. Over the past 15 years, this trend has increased to approximately 3.2 mm per year. This rate varies significantly around Australia. Since the early 1990s northern Australia has experienced increases of up to 7.1 mm per year.

In 2009, the Australian Government produced the report [Climate Change Risks to Australia's Coasts](#), followed in 2011 by an update to this report entitled [Climate Change Risks to Coastal Buildings and Infrastructure](#). These reports provide information on sea level rise in Australia.

#### Extreme Events

In Darwin the number of days over 35°C is expected to increase from 11 per year currently experienced to up to 69 by 2030 and up to 308 by 2070 without global action to reduce emissions. Coupled with the extremely high humidity that Darwin experiences during the wet season, higher temperatures are expected to adversely affect levels of human comfort.



In Alice Springs, the number of hot days over 35°C is expected to increase from 90 per year currently experienced to up to 182 by 2070 without global action to reduce emissions.

Projections indicate there may be an increase in the proportion of tropical cyclones in the more intense categories, with a decrease in the total number of cyclones. For example, the number of category 3 to 5 cyclones is projected to increase, and by 2030 there may be a 60 per cent increase in intensity of the most severe storms, and a 140 per cent increase by 2070.

## Human Health

It is predicted that without mitigation there may be as many as 407 temperature-related deaths in the NT by 2100, compared to 61 in a world with no human induced climate change. In Darwin, an estimated 2 people aged over 65 years die each year from heat-related deaths (1997-1999 average). This could potentially rise to between 37 and 126 each year by 2050.

The NT is also highly receptive to the establishment of mosquito-borne diseases such as dengue, which can lead to serious and sometimes life-threatening illnesses. Under moderately warmer and wetter climate conditions, combined with changes in water storage practices such as an increase in the establishment of water tanks under increasing drought conditions, there may be an increase in the prevalence of some mosquito-borne diseases in some parts of the NT.

Warmer temperatures and increased rainfall variation may also increase the occurrence of food and water-borne diseases.

## Natural Environments

Tourism is a major industry and employment sector for the NT and is largely focused on the natural environments. In 2010, 1.3 million people visited the NT and spent over \$1.4 billion. Tourism is estimated to contribute around 10 per cent to the NT economy.

Some of the most visited iconic sites, such as the Kakadu National Park, are under threat from the impacts of climate change.

In 2011, the Australian Government released the report [Kakadu: Vulnerability to Climate Change Impacts](#) which outlines the impacts of climate change to this important area.

The lowland parts of Kakadu are vulnerable to changed salinity as a result of sea level rise and saline intrusion into groundwater. Current projections are that sea level around Kakadu will rise by at least 8 cm and by up to 30 cm by 2030.

Rising sea levels will have severe impacts given the wetland system of Kakadu is contingent on a delicately balanced interaction between its freshwater and marine environments. Fundamental changes in ecological function of the national park will place severe pressure on many species of both plants and animals.

Salt water intrusion into the Kakadu wetlands over the past 50 years has resulted in the tidal range of creeks moving four kilometres inland in the East Alligator River catchment, and significantly increased the area of bare and saline mudflats, killing two-thirds of the Melaleuca forest.

Melaleuca swamp forests are important roosting habitats for many waterbirds, and are also utilised by aquatic fauna for spawning. A decrease in this habitat will have negative impacts on such species.

## Agriculture

Climate change is likely to put at risk agricultural production, particularly beef production in the NT. The NT had an estimated meat cattle population of around 1.7 million in 2009. Potential changes in the climate could reduce beef production by 19.5 per cent by 2030 and by 33.2 per cent by 2050. Climate change may also exacerbate the impacts of heat stress and cattle ticks on beef production.

## Adaptation

Given the NT's high vulnerability to projected climate change, it is important that appropriate actions are taken by government, businesses, communities and individuals to ensure effective adaptation is possible in a changing environment.

## More information

For details on what the Australian Government is doing to prepare for the impacts of climate change, and to see the Report [Kakadu: Vulnerability to Climate Change Impacts](#), visit [www.climatechange.gov.au](http://www.climatechange.gov.au)

See what the Northern Territory Government is doing, at [www.dcm.nt.gov.au](http://www.dcm.nt.gov.au) and then click on Strong Territory > Climate Change

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