



Australian Government

Bureau of Meteorology

Bureau of Meteorology

Todd Smith

Manager

Climate Services Centre, NT

Australian Bureau of Meteorology

P: 08 8920 3813

E: Todd.Smith@bom.gov.au



Australian Government
Bureau of Meteorology

NT Climate Services Centre

- What do we do at NTCSC?
 - What am I here for?
- What does the science tell us to expect?
 - The future
- What can we all do?
 - The response



Australian Government
Bureau of Meteorology

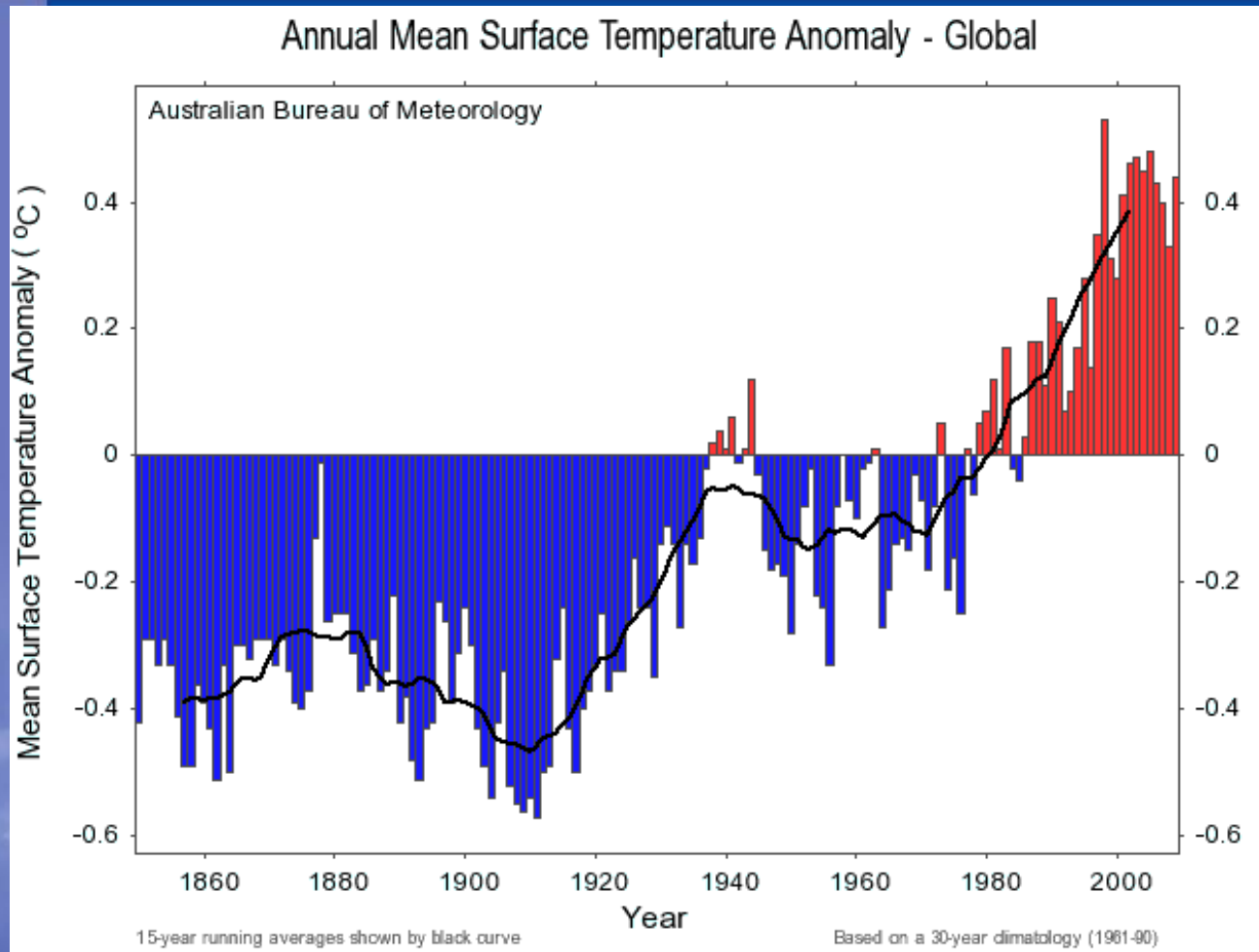
What does my group do?



- Maintaining and Publishing the Climate Record
- Monitoring of Climate Variability and Change
 - Climate Watch – reporting extremes / records
 - Climate studies and analyses
- Providing Advice on Climate Matters
 - Media work
 - Engagement with community
 - Advisory services to decision makers
 - Collaborative projects
- Act as a conduit to the best Climate Change expertise in Australia



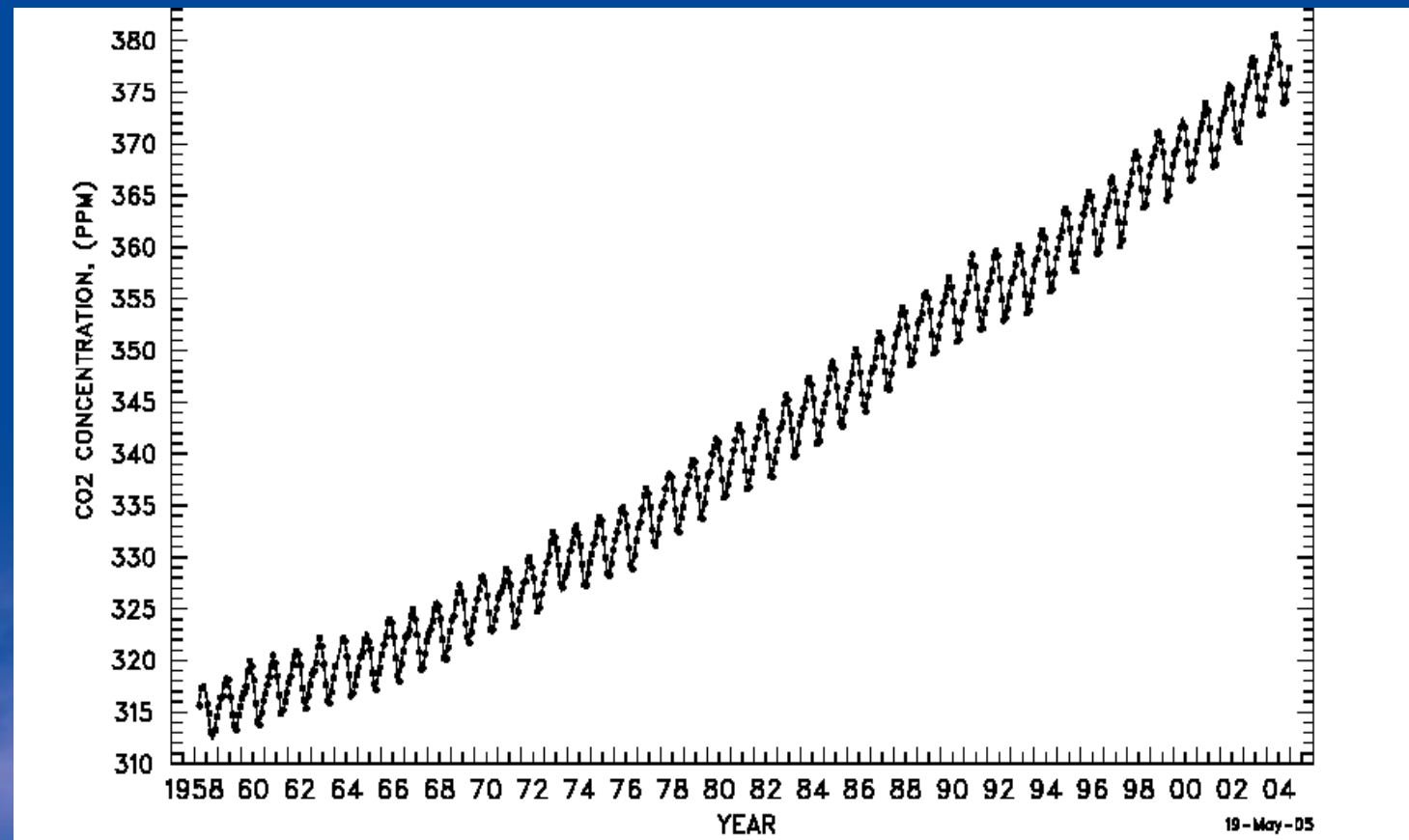
Global Average Temperatures





Australian Government
Bureau of Meteorology

The composition of the Atmosphere has changed.

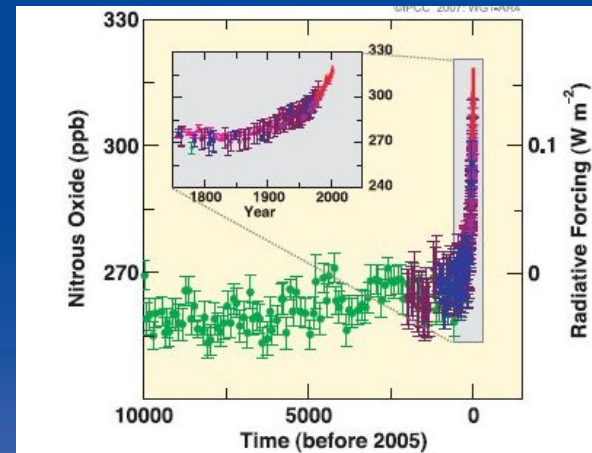
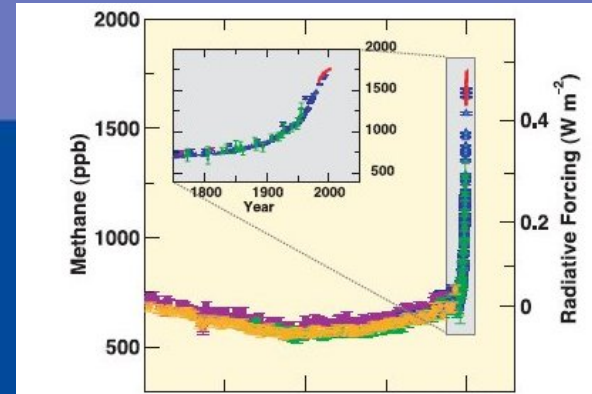
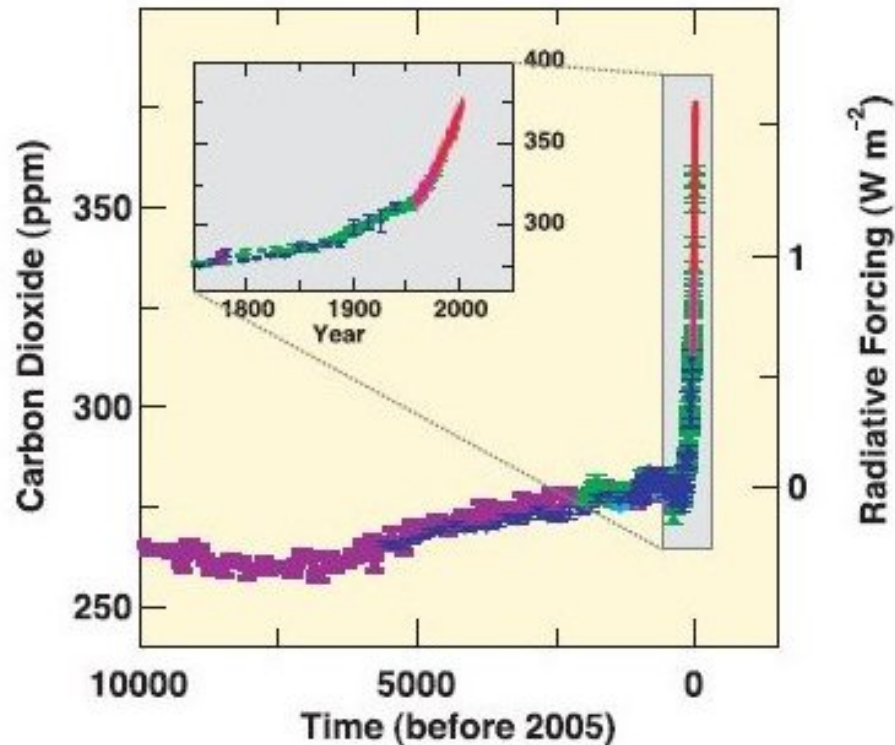


Source: IPCC WG1-AR4, 2007



Carbon Dioxide (CO₂) levels are historically high

CHANGES IN GREENHOUSE GASES FROM ICE CORE AND MODERN DATA



Source: IPCC WG1-AR4, 2007

Figure SPM.1. Atmospheric concentrations of carbon dioxide, methane and nitrous oxide over the last 10,000 years (large panels) and since 1750 (inset panels). Measurements are shown from ice cores (symbols with different colours for different studies) and atmospheric samples (red lines). The corresponding radiative forcings are shown on the right hand axes of the large panels. {Figure 6.4}

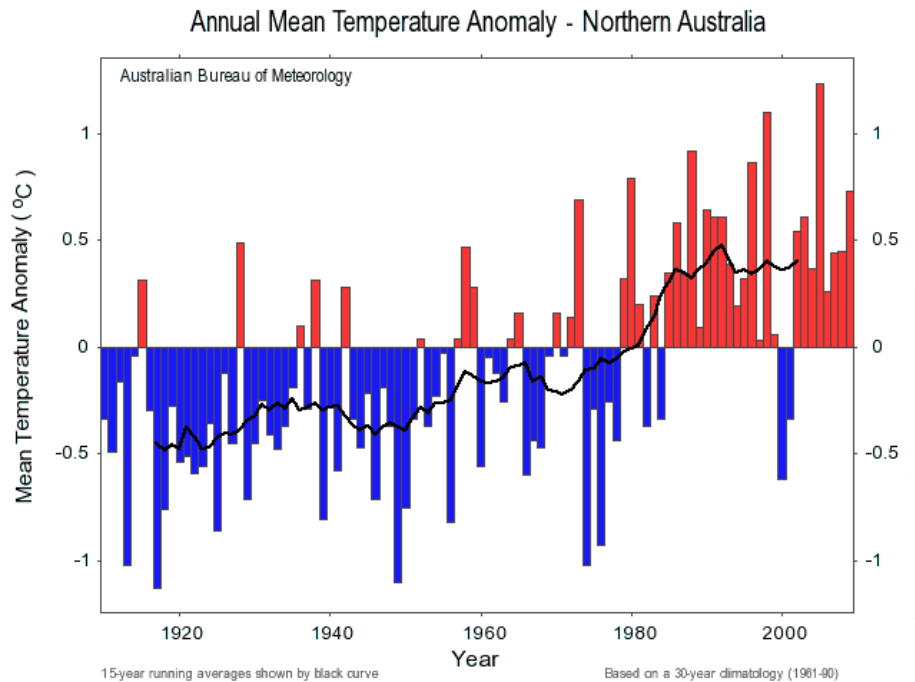


Australian Government
Bureau of Meteorology

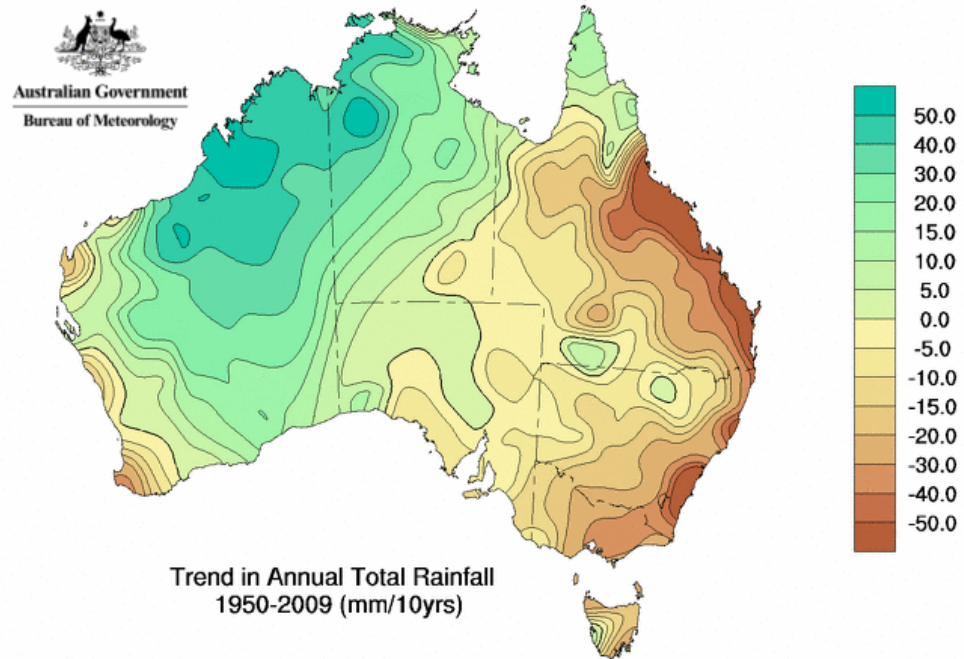
Northern Australia's Changing Climate

It's getting hotter and rainfall patterns have changed

Temperatures since 1910



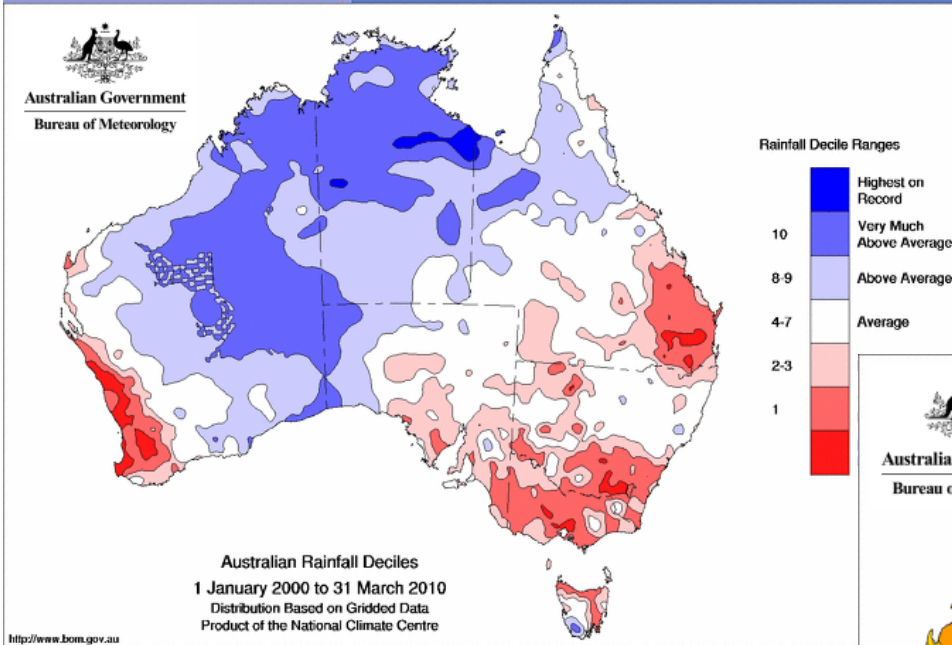
Rainfall since 1950



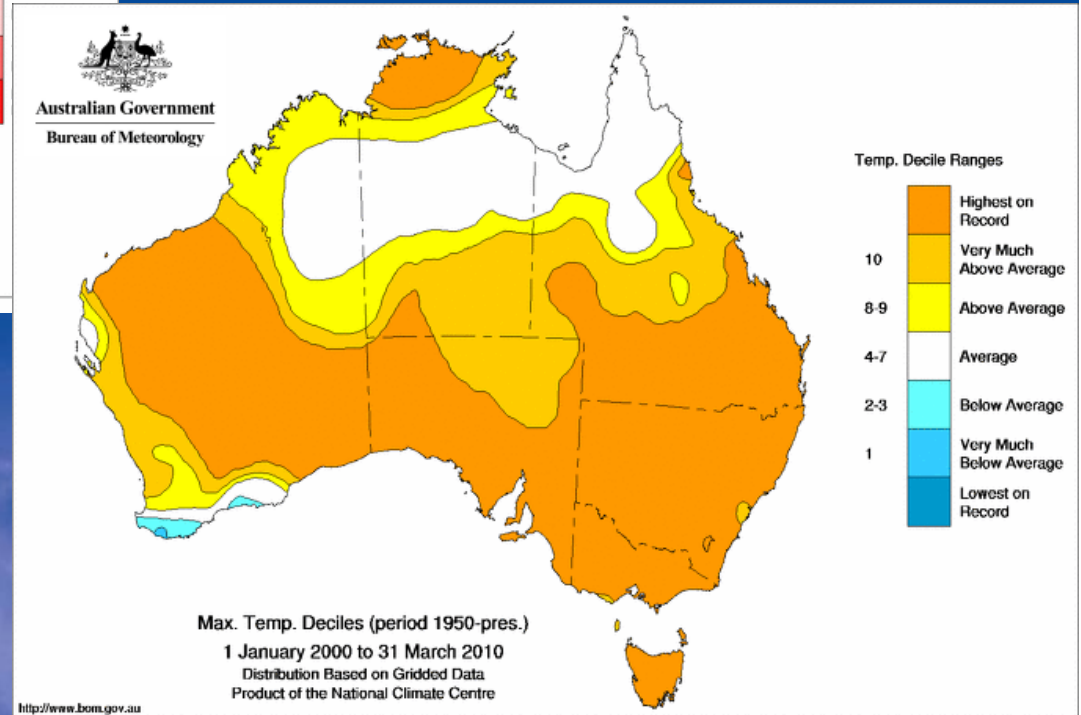


Australian Government
Bureau of Meteorology

This past decade...



© Commonwealth of Australia 2010, Australian Bureau of Meteorology ID code: IGMaP4QprBarresRainAust



© Commonwealth of Australia 2010, Australian Bureau of Meteorology ID code: IGMaP4QNTempDeciles Issued: 20/04/2010



Australian Government
Bureau of Meteorology

Projected Changes in North Australian Rainfall

Temperature

- It's going to get hotter.

Rainfall

- Uncertainty in total annual rainfall.
- Expecting more intense rainfall events.

Sea Level

- Will rise, but not sure how much.

Source: Climate
Change in Australia



What about Tropical Cyclones?

- Likely increase in the proportion of intense TCs
- Likely increase in rainfall associated with TCs
- Possible decrease in total number of TCs
- ***Increased vulnerability due to sea level rise***



Australian Government

Bureau of Meteorology

What Can We Do?

There are three options (not mutually exclusive):

Mitigation – minimising future climate change

Adaptation – reduce the impact of (or the vulnerability to) climate change

Suffering – suffer the consequences as changes happen (also some benefits)



Australian Government
Bureau of Meteorology

Adapting to Climate Change

- Preparing for the extremes that we are observing now

Increase awareness of current extremes

- Working with a common focus to withstand change

Productive collaboration at all levels



Australian Government
Bureau of Meteorology



Australian Government
Bureau of Meteorology

Indigenous Weather Knowledge

Seasonal Calendars

Click on the red dot to
access the seasonal
calendar for that region



Australian
Government
Bureau of
Meteorology

MONASH
UNIVERSITY



ATSIC



Where to from here?

- BoM want to understand (and service) the climate needs of north Australians
 - Tell us what you need.
- Opportunities for collaboration on planning projects.
 - Through NT Govt and other initiatives.
- Position ourselves to understand the risks



Australian Government
Bureau of Meteorology

Todd Smith

Manager

Climate Services Centre, NT

Australian Bureau of Meteorology

P: 08 8920 3813

E: Todd.Smith@bom.gov.au