



## Focus on climate adaptation to complement mitigation research

With some degree of climate change now 'locked in' over coming decades due to the concentration of greenhouse gases already in the atmosphere, CSIRO has launched a Climate Adaptation Flagship, which complements the organisation's existing research into climate systems, low-emission technologies, water-resource availability and water-use efficiency.

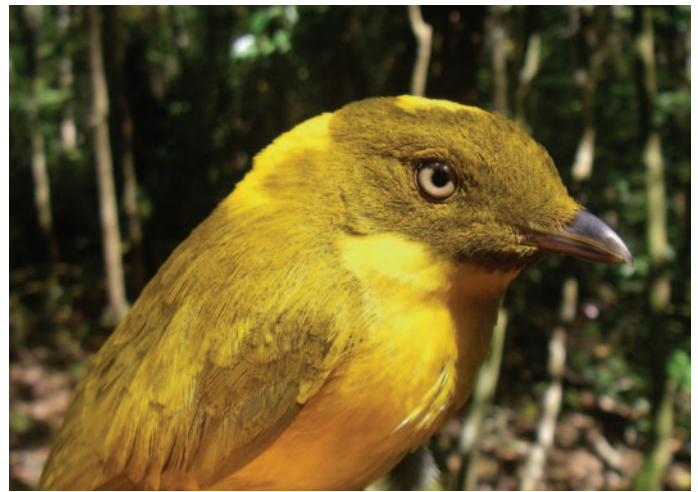
'Many of the decisions that will shape Australia in 2030 are being made today – such as new infrastructure and urban developments – so now is the time to incorporate climate adaptation into our thinking,'

said Flagship Director, Dr Andrew Ash.

A CSIRO researcher involved with the Flagship, Dr Michael Dunlop, has prepared a report for the federal government on the implications of climate change for the national reserve system.

'Traditionally, conservation has focused on preventing change or restoring landscapes toward a pre-European state, but we now have to accept that change is inevitable, and it's happening quite fast,' said Dr Dunlop.

'Some animals and plants will be found in places where they've never been seen before, and others will disappear from



The golden bowerbird, found in north Queensland's tropical rainforests, is particularly vulnerable to climate change. Adam McKeown, CSIRO

areas where they were once common, and for many regions the look, sound and smell of the landscapes we are familiar with will gradually change.

'One challenge will be

deciding how to respond when native species turn up in new areas and threaten local species.'

[www.csiro.au/org/ClimateAdaptationFlagship.html](http://www.csiro.au/org/ClimateAdaptationFlagship.html)

## Deep ice cores show greenhouse gases are highest for 800 000 years

In a paper published in *Nature* in May, a team of researchers reported that greenhouse gases are at higher levels in the atmosphere than at any time in at least 800 000 years, during which time the earth has experienced eight ice ages and inter-glacial periods.

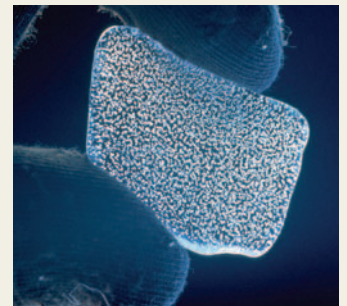
The study also linked variations in methane concentrations to increased monsoonal activity.

The evidence has come from carbon dioxide and methane trapped in air bubbles in ancient ice 3200 metres below the surface of Antarctica,

almost to bedrock. These have added another 150 000 years of data to climate records stretching back 650 000 years from shallower ice drilling.

Chinese and Australian scientists are also examining the possibility of drilling in parts of Antarctica with deeper ice, up to 4500 metres thick, which could yield atmospheric records dating back 1.5 million years.

[www.nature.com/nature/](http://www.nature.com/nature/)



Evidence from air bubbles trapped in ice show greenhouse gas levels are alarmingly high. ScienceImage, CMAR

## New centre for climate policy targets flight emissions and feedbacks

The Australian National University (ANU) has opened the world's first legal research centre devoted to climate change policy.

Andrew Macintosh, Associate Director of the Centre for Climate Law and Policy, has already called for airlines and passengers to pay for offset programs that could

counter the huge output of carbon dioxide emissions from international flights.

Macintosh argues that an emissions offset charge of \$5–\$15 per tonne of CO<sub>2</sub> should be added to the international fares of all developed-country flights, with developing country flights paying less. For Australians,



The ANU Centre for Climate Law and Policy has called for an emissions offset charge to be added to all international airfares. iStockphoto, Shaun Lowe

this would add about \$20 to the price of a London–Sydney fare.

In another paper, Macintosh

says information from coupled climate-carbon cycle models suggests the emission cuts required to prevent global average surface temperature increasing by more than 2–3°C above pre-industrial levels are more than previously believed.

'The importance of climate-carbon cycle feedbacks is well known in scientific circles, but often overlooked in the policy process where decision makers often rely on data that do not fully account for this information.'