About Earthwatch

Earthwatch promotes sustainability by engaging people in science-based conservation.

- Founded in Massachusetts, 1971
- Earthwatch Australia incorporated 1982
- Solutions focused and non-adversarial
- In 2009, 100 projects in 42 countries
- 3,500 ‘citizen scientists’ involved each year
- Making a difference
  - More than 150 new species of plants & animals discovered in Australia in 2009
  - Partnering with responsible businesses for more than 20 years
  - 139 new management strategies developed since 2002
  - 224 peer reviewed scientific publications in Australia

Winner of the 2009 Prime Minister’s Award for Australian Environmentalist of the Year
Australia’s changing climate

Trend in Mean Temperature
1970-2009 (°C/10yrs)
Australia’s changing climate
Australia’s changing climate

Rainfall Deficiencies: 10 months
1 January to 31 October 2010

Distribution Based on Gridded Data
Product of the National Climate Centre

http://www.bom.gov.au

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Issued: 31/10/2010
Australia’s Biogeography

Interim Biogeographic Regionalisation for Australia, Version 6.1

This map depicts the Interim Biogeographical Regionalisation for Australia (IBRA) version 6.1. IBRA regions represent a landscape based approach to classifying the land surface, including attributes of climate, geomorphology, landform, and characteristic flora and fauna. Specialist ecological knowledge combined with appropriate regional and continental scale biophysical data sets were interpreted to describe these regions. 85 IBRA regions exist across Australia.
AUSTRALIAN MAGPIE (Gibbs 2007 Emu 107: 284-293)
Butterflies 'fly early as planet warms'

By Anna Salleh for ABC Science Online

Updated Wed Mar 17, 2010 3:03pm AEDT

Australian scientists say they have uncovered a "causal link" between the early emergence of a common butterfly and human-induced global warming.

Dr Michael Kearney of the University of Melbourne and his colleagues report their study on the butterfly Heteronympha merope in this week's issue of Royal Society Journal Biology Letters.

"It's now coming out about 10 days earlier than it was 30 years ago," Dr Kearney said.

"When you look at the air temperatures over that time, it's getting warmer."

Dr Kearney says the local Wurundjeri Aboriginal people have traditionally defined one of their seasons as beginning when they see the male of the common brown butterfly on the wing.

"That part of their calendar would be shifted 10 days earlier," he says.

Dr Kearney says that while previous studies have found a correlation between global warming and animals coming out earlier in spring, this study is the first to provide evidence of a causal link between this phenomenon and human-induced global warming.

He says his team has carried out laboratory experiments to quantify the physiological effect of rising temperatures on butterflies and has also shown the measured temperature increases are not due to natural climatic variation.
The northern hemisphere response

► UK Phenology Network:
  www.naturescalendar.org.uk
  ->

► From 200 to now 25,000 observers

► 600,000 records annually
Solution: climatewatch.org.au
ClimateWatch allows **every Australian** to help shape our country’s scientific response to climate change.

- **What is it?** – which species
- **Where was it?** – location it was seen
- **When was it there?** – date of the observation
- **How was it behaving?** – nesting, flowering, calling
Time?
Australia’s population

(a) Estimated resident population.
Source: Australian Demographic Statistics (3101.0).
<table>
<thead>
<tr>
<th>Species</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birds</td>
<td>32</td>
</tr>
<tr>
<td>Marine Animals</td>
<td>6</td>
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<tr>
<td>Frogs</td>
<td>10</td>
</tr>
<tr>
<td>Plants</td>
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<tr>
<td>Insects</td>
<td>18</td>
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<tr>
<td>Reptiles</td>
<td>7</td>
</tr>
<tr>
<td>Mammals</td>
<td>5</td>
</tr>
<tr>
<td>Spiders</td>
<td>5</td>
</tr>
</tbody>
</table>
ClimateWatch: Landcare Week 6 – 12 September

Welcome to ClimateWatch - the unique program where your eyes and ears will help shape Australia’s scientific response to climate change. ClimateWatch is the feature of this year’s Landcare Week, where by collecting and recording information from your own backyard, you will help scientists study the impact of climate change on our ecosystems. Simply register now to become a ClimateWatcher.

**Five species to start you off**
To start you off five species have been selected as part of Landcare Week: Willy Wagtail, Magpie, Striped Marsh Frog, Ribwort Plantain and Cabbage White Butterfly.

Note: There are over 80 indicator species to observe so you can be sure there will be plenty to look out for in your area.

**Download the Landcare registration pack**
To find out more about each of these species download the Landcare Week Welcome Pack.
ClimateWatch
Trail Pocket Guide
Piney Lakes Reserve
Marri
*Corymbia callophylla*

What did you see? (please tick)

A  E

- First fully open single flower
- Full flowering
- End of flowering (when 95% of the flowers have faded)

When to look: December to May

Site A  End of carpark
Site E  Look east