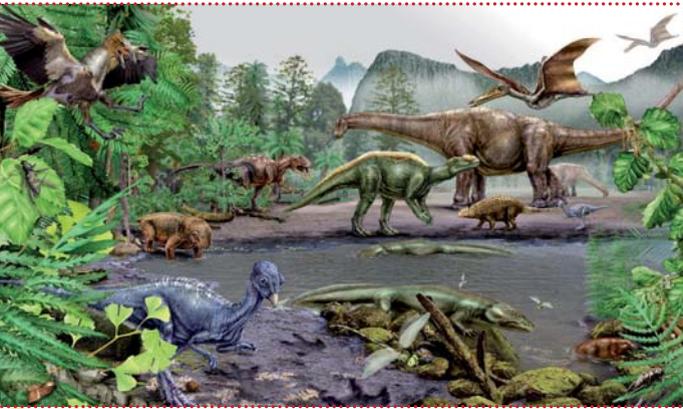




AUSTRALIA: geological evolution



⚡ This artist's rendition shows some of the warm-blooded dinosaurs that flourished in the Dinosaur Cove area in Victoria during the Early Cretaceous period (100–125 million years ago).

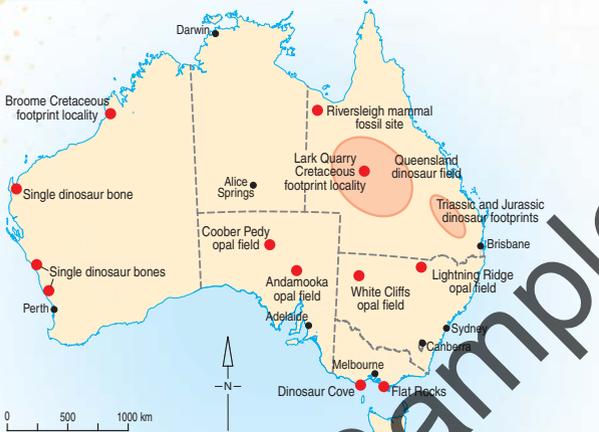
Key Facts >>

Australia was once part of a large landmass called Gondwana that also included India, South America, Africa and Antarctica. Gondwana existed as a supercontinent as long as 650 million years ago, and began to break up some 130 million years ago to form the separate continents we know today. During these millions of years, major changes in climate and sea level occurred. When Australia was part of Gondwana it was much further south than it is now and was adjacent to Antarctica. Some of the geological evidence for this includes the discovery of polar dinosaur fossils at Dinosaur Cove in Victoria.

Further geological evidence that Gondwana was once a large landmass can be seen in rocks and fossils. Fossils of trilobites (a diverse range of arthropods) have been found in Tibet, China, South-East Asian peninsulas and Antarctica. Some species of plants and animals found on different landmasses have a common origin. Beech trees related to Australian species are found in New Zealand and South America. Marsupials are found only in Australia, New Guinea and South America.

Australia's isolation over a long period has led to the development of its unique flora and fauna.

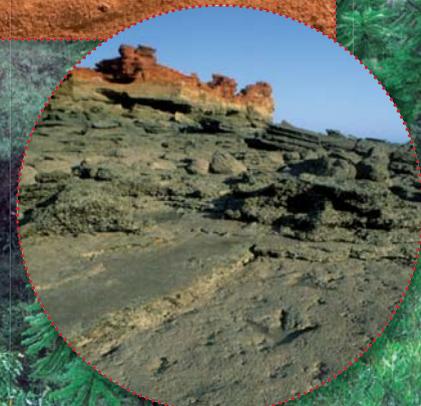
Major dinosaur and mammal fossil sites in Australia



⚡ This map shows the many sites in Australia where dinosaur fossils have been found. Also shown is Riversleigh, Queensland, which is a World Heritage fossil mammal site that provides evidence of key stages in the evolution of Australia's fauna.

⚡ In 1994 about 40 Wollemi pine trees were discovered in two small stands in Wollemi National Park in New South Wales. No similar plants exist anywhere else in the world. The species was identified from fossils dating from 100 to 150 million years ago.

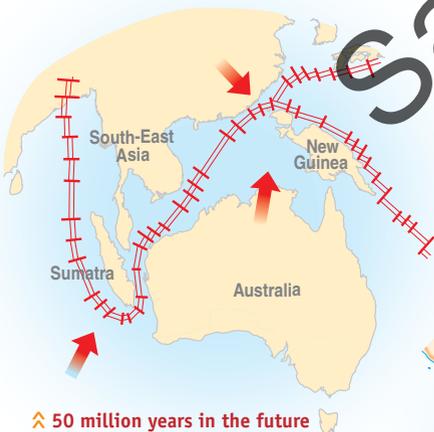
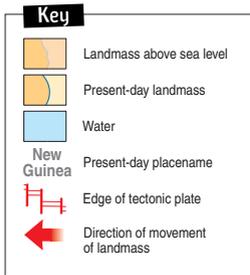
⚡ At Gantheaume Point, near Broome in Western Australia, ancient dinosaur footprints that are more than 120 million years old have been found. The footprints can be seen in the rocky reef area when the tide is low. The footprint on the right is 46 centimetres in length.



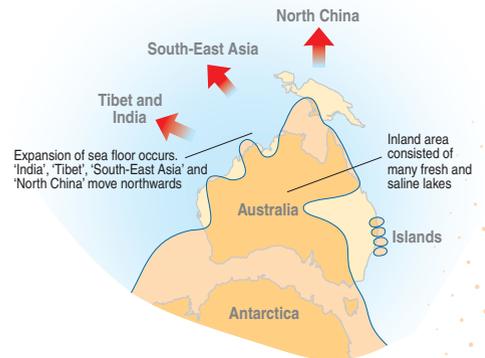
>> Evolution of the Australian continent



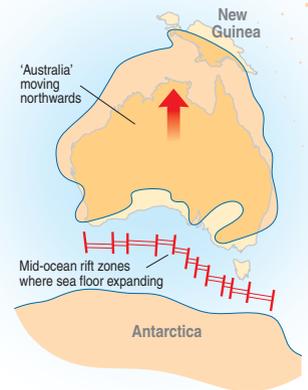
⚡ **600 million years ago**
The huge landmass of Gondwana



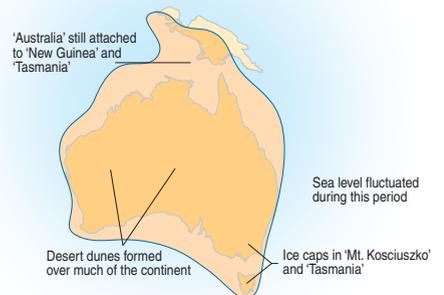
Today
Present-day Australia >>



⚡ **360 million years ago**
Australia and Antarctica were still joined.



⚡ **53 million years ago**
The Australian continent was separating from Antarctica.



⚡ **2 – 1.5 million years ago**
During periods of low sea levels, continental shelves were exposed to form 'land bridges'.

Significant geological events (Time in millions of years)

- Present time
- Last Ice Age
- Low sea levels
- 50 'Australia' and 'Antarctica' separate
- Last link to 'Antarctica'
- 100 Half of modern 'Australia' submerged
- 200 Major weaknesses form between 'Australia' and 'Antarctica'
- 300 Ice Ages in 'Australia'
- 400 'Tibet' and 'India' separate from Gondwana
- 500 Gondwana exists
- 'Australian' glaciation
- World Ice Ages
- 1000 'Australia' and 'Antarctica' join
- 2000
- 3000
- 4000
- 4100 World's oldest crystals ever dated found at Mt. Harry, WA

Development of Australia's natural environment

- Earliest evidence of human occupation
- Eucalypts
- Dinosaurs extinct
- Monotremes
- Flowering plants
- Dinosaurs dominant
- Large conifer forests
- Dinosaurs
- Amphibians – first land animals
- Lungfish
- Evidence of footprints of a scorpion-like marine animal
- Mosses and modern plants
- Jellyfish – first animals
- Sexual reproduction in plants
- Cells with nucleus
- Evidence of chlorophyll
- Stromatolites – oldest living beings



AUSTRALIA: human features

Bushwalking in >> central Australia. Outback tourism is a major employer in the Northern Territory.



<< Sydney, Australia's most populous city

The Australian War Memorial, Canberra, Australian Capital Territory >



>> Key Facts >>

Largest and smallest

Western Australia is the largest State in Australia, with an area of 2 525 500 square kilometres. The Australian Capital Territory has a land area of only 2400 square kilometres.

Most and least

In 2009 New South Wales was the most populous State with 6 967 200 inhabitants. The Northern Territory was the least populous with 219 900 people.

Crowded and empty

Australia's 21 553 700 people (2009) occupy 7 686 848 square kilometres. Overall, Australia's population density is a low 2.8 people for every square kilometre. On average, 142 people live on every square kilometre of the Australian Capital Territory. The Northern Territory has a population density of 0.2 people per square kilometre.

Richest and poorest

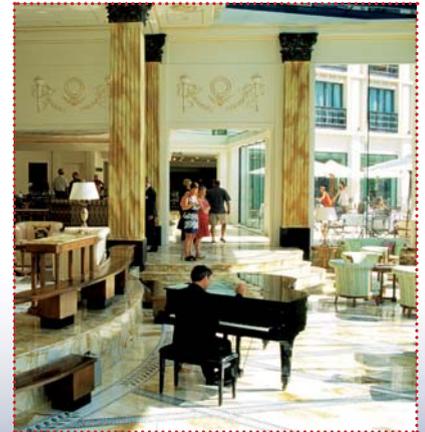
In 2008 the top 50 per cent of Australians owned 94 per cent of total national wealth; the top 10 per cent owned 49 per cent of wealth and the top 1 per cent owned 16 per cent of total wealth.

Largest city populations

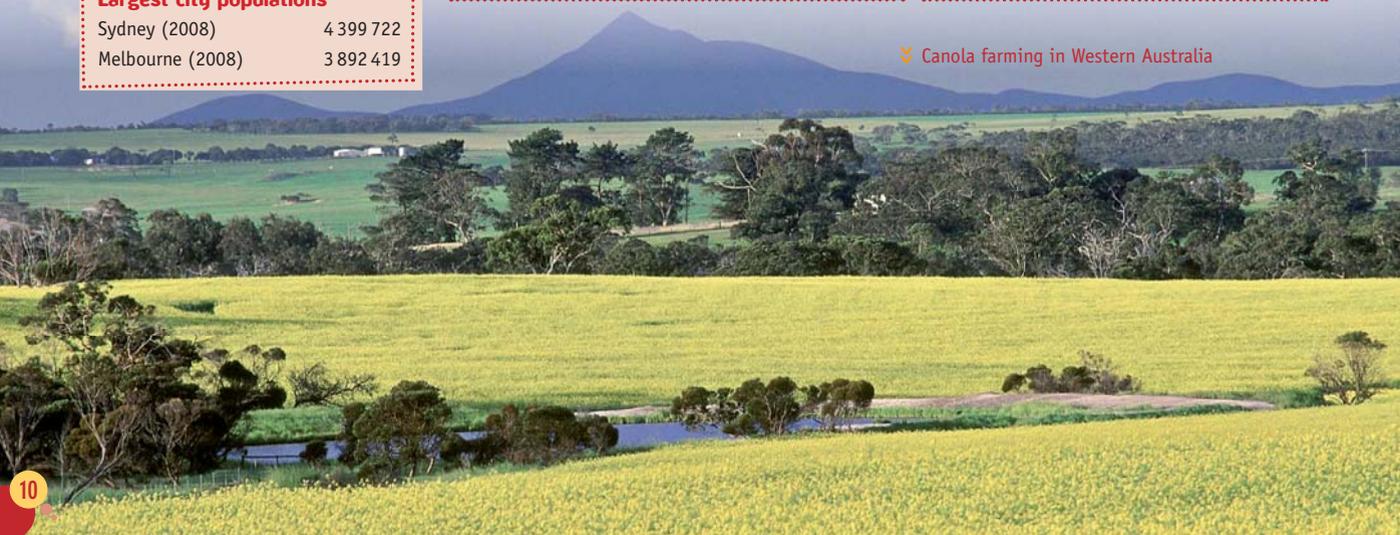
Sydney (2008)	4 399 722
Melbourne (2008)	3 892 419

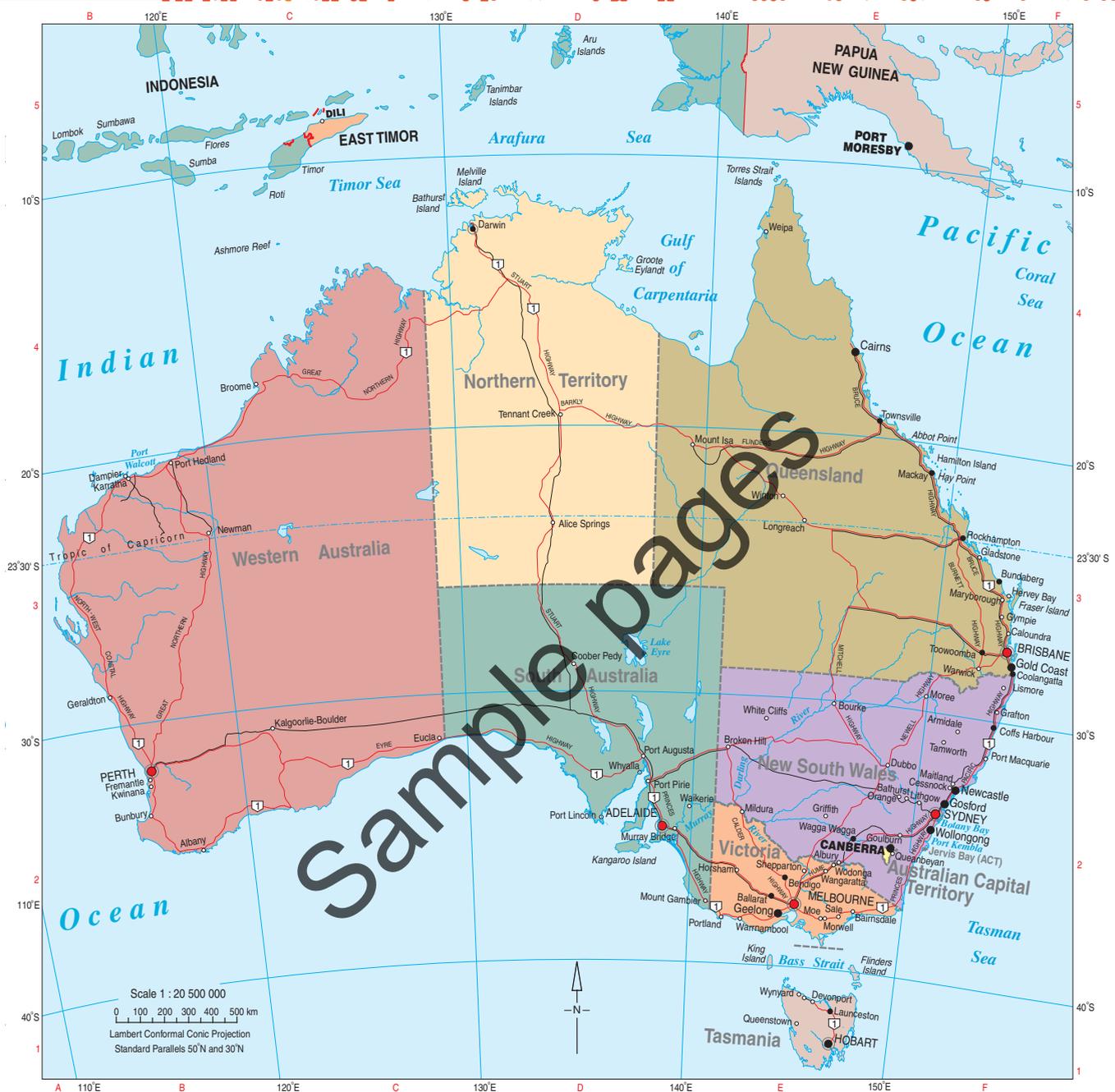


The opulent Palazzo Versace hotel on the Gold Coast, Queensland (below), and a brightly lit Melbourne (below left) contrast strongly with the picture of a homeless person on a city street (left).

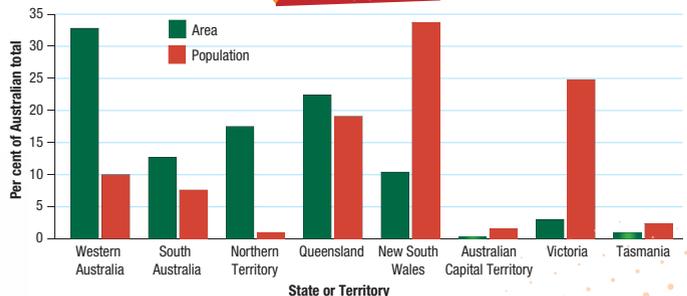


>> Canola farming in Western Australia





Area and population



Key

- River
- Lake
- National highway
- Road
- Railway
- International boundary
- Water as international boundary
- State or Territory boundary
- State or Territory

CANBERRA

- Country capital
- State or Territory capital (by population)

POPULATION

- SYDNEY 1 000 000 and over
- Geelong 100 000 to 1 000 000
- Bundaberg 50 000 to 100 000
- Whyalla Less than 50 000



AUSTRALIA: natural features

✓ The Ninety Mile Beach, Gippsland, Victoria, is one of the longest beaches in the world. Part of it is now a marine national park in order to preserve the diverse marine wildlife of this region.



Key Facts >>

Highest and lowest

Mount Kosciuszko (E2) in New South Wales is 2228 metres above sea level. The Thompson Deep (F2) off the New South Wales coast reaches a depth of -5944 metres.

Water and desert

The 2750-kilometre Darling River (E2) is Australia's longest river. Lake Eyre (D3), an intermittent salt lake, is its largest lake at 9500 square kilometres. The Great Victoria Desert (C3) is the largest desert in Australia, covering more than 300 000 square kilometres.

Hottest and coldest

Australia's highest recorded temperature is 53.1°C at Cloncurry (E3), Queensland, in 1889. The lowest recorded temperature is -23°C at Charlotte Pass (E2), New South Wales, in 1994. As Australia's weather patterns and climate alter due to global warming, such anomalies in temperature will become more frequent.

Wettest and driest

The highest average annual rainfall in Australia is 4537 millimetres at Babinda (E4), Queensland. In 2000, 12 461 millimetres of rain fell at nearby Bellenden Ker (E4), an Australian record for the most rain in a year. The lowest yearly rainfall, averaging under 100 millimetres, occurs around Lake Eyre (D3) in South Australia.

Largest and smallest

Mainland Australia, with an area of 7.69 million square kilometres, is the earth's largest island but its smallest continent. It stretches about 3700 kilometres from north to south and 4000 kilometres from east to west.

In area, Australia is the sixth-largest nation after Russia, Canada, China, the United States of America and Brazil. It is about twice the size of the European Union or the ten nations that make up the Association of Southeast Asian Nations (ASEAN). Its ocean territory – the third largest in the world – covers around 12 million square kilometres.

The total length of the Australian continental coast is 34 218 kilometres, making it the world's sixth-longest coastline after those of Canada, Indonesia, Russia, the Philippines and Japan.

✓ A water-filled Lake Eyre overlaid with a graph that shows annual inflows of water to Lake Eyre and the five-year moving average. The graph suggests the possibility that Lake Eyre is due to be fully filled in the near future.

