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CLIMATE AND PHYSIOGRAPHY

- 1993** The Victorian Government announced cuts to transport services, with the closure of some city and country rail services. Sir Ernest Edward (Weary) Dunlop, soldier, physician and surgeon died in Melbourne. The Victorian Government announced a seven member board to examine local government boundaries. Sydney was awarded the Olympic Games for the year 2000. Australia Post discontinued the use of telegrams. Torrential rain caused record flooding in the north-east of Victoria, particularly in Benalla and Euroa. Australian Airlines was officially merged with QANTAS. Victoria won a five year contract to host the Australian Formula One Grand Prix motor racing championship from 1996. The Native Title (Mabo) Bill was passed by Federal Parliament.
- 1994** The 127 bed Werribee Mercy Hospital was opened, as was the new \$65m. Peter McCallum Cancer Institute, on the site of the former St. Andrew's Hospital in East Melbourne. The Crown Casino was opened in temporary quarters at Melbourne's World Trade Centre. The Hume Highway Wangaratta By-Pass was opened, thus completing the freeway from Melbourne to Albury. The first major privatisation initiative of the Victorian Government was launched when the former Totalisator Agency Board was floated to the public as Tabcorp Holdings Limited. The State Electricity Commission of Victoria was restructured, with the creation of eight state owned bodies to operate the generation, transmission, and distribution components of the system.
- 1995** The Sixth World Police and Fire Games was opened at the Melbourne Cricket Ground, the largest sporting event held in Melbourne since the 1956 Olympic Games. Victoria won the right to hold the 500cc motorcycle Grand Prix on Phillip Island from 1997. As part of the Australia Remembers commemorations, various ceremonies around the country marked the 50th anniversary of VE Day, the end of the war in Europe in May 1945. In a move to expand the system, Melbourne's telephone numbers increased to 8 digits. The Victorian Government signed a \$1.76 billion agreement with Transurban for the construction of the City Link Tollways. A number of privatised electricity supply companies, formerly part of the State Electricity Commission of Victoria, were sold. A State Funeral was held for the late Edward James (Ted) Whitten, footballer, who died aged 62. Optus Vision began the first Australian transmission of pay television by cable. A new polymer (plastic) \$50 banknote was launched. The 115-year-old department store Georges of Collins Street closed its doors for the last time.

REFERENCES

Victorian Year Book 1984

AUSCHRON, *Chronology of Australian History and Current Events*, published on CD-ROM by RMIT Informit and edited by J. D. Adams.

Introduction

This chapter contains an outline of Victoria's physiography and climate with contributions from the Department of Conservation and Natural Resources and the Bureau of Meteorology.

Physical features

Although Victoria is the second most populous State or Territory in the country, it is ranked sixth in terms of geographic size (about the same area as Great Britain) and accounts for only 3% of Australia's total area. Victoria has the highest population density of all States in Australia (20 persons per square kilometre) compared to the national average of about 2 persons per square kilometre. Its relatively small size is emphasised by the fact that no point of the State is more than 380 kilometres from the sea.

TABLE 3.1 AREA OF STATES AND TERRITORIES

State or Territory			
Western Australia	2 525 500	12 500	32.88
Queensland	1 727 200	7 400	22.48
Northern Territory	1 346 200	6 200	17.52
South Australia	984 000	3 700	12.81
New South Wales	801 600	1 900	10.44
Victoria	227 600	1 800	2.96
Tasmania	67 800	3 200	0.88
Australian Capital Territory	2 400	(a) 35	0.03
Australia	7 682 300	36 735	100.00

(a) Jervis Bay Territory.

Location

Victoria is located in the South-East of Australia, the southernmost mainland State. The most southerly point of Wilsons Promontory is the southern most point of the mainland of Victoria and similarly of the mainland of Australia; the northernmost point is where the western boundary of the State meets the Murray River; the point furthest east is Cape Howe. The western boundary extends a distance of 451 kilometres.

Coastline

The Victorian coastline comprises many types of environments. Broad sandy beaches and impressive cliffed headlands along the ocean coast contrast with mangrove-fringed mudflats and marshland of the sheltered embayments and estuaries. There are approximately 1,300 kilometres of ocean coast between Cape Howe and the South Australian border; in addition, three large embayments - Port Phillip Bay (270 kilometres), Western Port Bay (150 kilometres), and Corner Inlet (80 kilometres) - partially enclose protected waters where most of the ports and harbours are situated.

Divisions

The chief physical divisions of Victoria are shown below. Each of these divisions has certain physical features which distinguish it from the others.

1. Murray Basin Plains

- (a) The Mallee: Predominantly East-West running sand dunes.
- (b) The Riverine Plains: Thick alluvium plain with few hills.
- (c) The Wimmera: Aelian and alluvial sandplain; minor sandstone ridges.

2. **Central Highlands**
 - (a) The Eastern Highlands: Plateau area with peaks of up to 2,000 metres composed of granite, volcanic, sandstone and limestone rocks.
 - (b) The Western Highlands:
 - (i) The Midlands: Local variations with higher areas caused by erosion or faulting.
 - (ii) The Grampians: Sandstone ridges heavily forested with annual rainfall over 75cms.
 - (iii) The Dundas Tablelands: Western limit of the Western highlands. Predominant flat surface cut by deep narrow valleys.
3. **Western District Plains**
 - (a) The Volcanic Plains: Built by outpourings of lava. Features include volcanic cones, stony rises and lakes.
 - (b) The Coastal Plains: Limestones and clays. Heavily eroded along the coasts forming vertical cliffs and rock stacks.
4. **Gippsland Plains**
 - (a) The East Gippsland Plains: Overlain by gravel and sand deposited by streams.
 - (b) The West Gippsland Plains: Sandy and contained large areas of swamp which have mostly been reclaimed.
5. **Southern Uplands**
 - (a) The Otway Ranges: Between 500 and 700 metres above sea level. Sandstone rocks with deep valleys cut by waterways.
 - (b) The Barrabool Hills: North east of Otway Ranges made up of sandstone.
 - (c) The Mornington Peninsula: Complex geological structure caused by faults.
 - (d) The South Gippsland Highlands: Composed of sandstone and somewhat similar in appearance to the Otway Ranges.
 - (e) Wilsons Promontory: Granite residual, once an island, now tied to the mainland by a sand bar.

Other features

Victoria's highest mountain is Mt Bogong, located in the highlands of north-eastern Victoria. The longest river is the Goulburn which runs from Lake Eildon to the Murray east of Echuca. Other major physical features are shown in Table 3.2.

TABLE 3.2 SELECTED PHYSICAL FEATURES, VICTORIA

Mountain	Height (metres)	River	Length (km)
Bogong	1 986	Goulburn	566
Feathertop	1 922	Glenelg	457
Nelse North	1 883	Loddon	381
Fainter South	1 877	Mitta Mitta	286
Loch	1 874	Hopkins	281

Public land area**TABLE 3.3 ESTIMATED PUBLIC LAND AREA, 1995**

Dedicated nature conservation reserves	34 140	15
Other public land	43 244	19
Public land occupied by the Commonwealth Government	2 276	1
Freehold land	147 940	65
Total	227 600	100

Source: Department of Conservation & Natural Resources

Climate

The major topographical determinant of the climate is the Great Dividing Range, running east-west across the State, and rising to nearly 2,000 metres in the eastern half. This acts as a barrier to the moist south-east and south-west winds and together with its proximity to the coast, causes the south of the State to receive more rain than the north.

To the south of Victoria, except for Tasmania and its islands, there is no land for 3,000 kilometres. This vast area of ocean has a moderating influence on Victoria's climate in winter. Snow, which is a common winter occurrence at similar latitudes on the eastern seaboard of the great land masses of the northern hemisphere, is rare in Victoria below elevations of 600 metres. To the north of Victoria, the land mass of Australia becomes very hot in the summer, and on several days at this time of year the temperature over the State may rise to between 35°C and 40°C, often with a strong northerly wind.

In Melbourne

The proximity of Port Phillip Bay bears a direct influence on the climate of the metropolitan area. The hottest months in Melbourne are normally January and February, when the average maximum temperature is 26°C. Inland, Watsonia has an average of 27°C, while along the Bay, Aspendale and Black Rock, which are subject to any sea breeze, have an average of 25°C. This difference does not persist throughout the year, however, and in July average maxima at most stations are within 1°C of one another, at approximately 13°C. The hottest day on record in Melbourne was 13 January 1939, when the temperature reached 45.6°C. This is the second highest temperature ever recorded in an Australian capital city. In Melbourne, the average number of days per year with maxima over 35°C is about nine, but there were twenty-five in the summer of 1897-98 and there has been only one year with no occurrence, namely 1984. The average annual number of days over 30°C is approximately twenty-nine.

Nights are coldest at places a considerable distance from the sea, and away from the city where heat retention by buildings, roads, and pavements may maintain the air at a slightly higher temperature. The lowest temperature ever recorded in the city was -2.8°C on 21 July 1869, and the highest minimum ever recorded was 30.6°C on 1 February 1902.

In Melbourne the overnight temperature remains above 20°C on about four nights per year. During the early years of record, temperatures below 0°C were recorded during most winters. However, over more recent years, the urban 'heat island' effect has resulted in such low temperatures occurring only once in two years on average. Minima below -1°C have been experienced during the months of May to August, while even as late as October extremes have been down to 0°C. During the summer, minima have never been below 4°C.

Wide variations in the frequency of occurrences of low air temperatures happen across the Melbourne metropolitan area. For example, there are approximately ten annual occurrences of 2°C or less around the Bay, but the frequency increases to over twenty in the outer suburbs and probably to over thirty a year in the more frost susceptible areas. The average frost-free period is about 200 days in the outer northern and eastern suburbs, gradually increasing to over 250 days towards the city, and approaching 300 days along parts of the bayside. The means of the climatic elements for the seasons in Melbourne, computed for the most recent thirty year period, are shown below in Table 3.4.

TABLE 3.4 MEANS OF CLIMATIC ELEMENTS, MELBOURNE

Atmospheric pressure (hectopascals)	1 018.2	1 013.6	1 018.7	1 018.9
Maximum temperature of air in shade (°C)	19.6	25.1	20.6	14.4
Minimum temperature of air in shade (°C)	10.3	13.7	11.8	7.0
Relative humidity at 9 a.m. (% saturation = 100)	64	61	72	78
Rainfall (mm)	175	154	164	149
Number of days of rain	40	25	34	44
Amount of evaporation (mm) (a)	346	563	269	135
Daily amount of cloudiness (scale 0 to 8) (b)	4.9	4.2	4.8	5.2
Daily hours of sunshine (c)	6.5	8.4	5.6	4.5
Number of days of fog	1.4	0.6	5.7	10.1

(a) Measured by Class A Pan (records commenced 1967).

(b) Scale: 0 = clear, 8 = overcast.

(c) Measured at Laverton (records commenced 1968).

Source: Bureau of Meteorology