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# Introduction to Environmental Essentials WA

# ESSENTIALS

Apple MUSIC



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[www.garrymiddle.net](http://www.garrymiddle.net)



- Wiki.landtrack.com.au
- Click “**Training Resources**”;
- then “**Environmental Essentials WA**”
- Drag this into your favourites bar



- Gain an understanding and awareness of -
  - The legislation and subsidiary instruments for environmental protection and management;
    - Main (but not only) focus is the *WA Environmental Protection Act 1986*
  - Assessment/approvals processes
  - The processes of mining rehabilitation and mine closure;
  - What is considered pollution and its prevention;
  - Managing and minimising waste; and
  - Broader issues – key policies, risk management and public engagement.
  - Cover contemporary matters and changes to legislations proposed.



- Overview of environment, environmental protection and management
- Key Act and approvals processes
  - *Environmental Protection Act 1986*
    - *EIA, Native Vegetation, Works approval and licences, pollution prevention*
  - *Biodiversity Conservation Act 2016*
  - *Contaminated Sites Act 2003*
  - *Rights in Water and Irrigation Act 1914*
  - *Environment Protection and Biodiversity Conservation Act 1999*
    - *EIA*
  - *Planning and Development Act 2005*
  - *Mining Act 1978*
    - Mining proposals
    - Mine closure and rehabilitation
- Proposed changes to key legislation
- Public engagement
- Broader issues – risk, uncertainty and intergeneration equity



Session Times		
1	9.00	10.30
2	10.40	12.10
3	12.50	2.50
4	3.00	4.30



- Hunt on Mining Law of Western Australia Fifth Edition
- *Mining Act 1978*
- *Environmental Protection Act 1986*
- *Planning and Development Act 2005*
- *Biodiversity Conservation Act 2016*
- *Contaminated Sites Act 2003*
- *Rights in Water and Irrigation Act 1914*
- *Environment Protection and Biodiversity Conservation Act 1999*
- Relationship between State and Commonwealth Law
- LandTrack Systems Wiki
- My book on environmental impact assessment in WA -  
<http://www.garrymiddle.net/eia-in-wa-book>



- Who are you.
- Who do you work for.
- What is your role







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# The Environment

Environmental Essentials WA



- What is the environment?
- Why is the environment important?
- World and Australia situation
- The scope of Environmental Protection
- Key pressures on the Environment



# What is the *environment*?

- *WA Environmental Protection Act 1986* definition
  - “... environment, subject to subsection (2), means living things, their physical, biological and social surroundings, and interactions between all of these.”
- S2 refers to ‘social surroundings’ and defines it as follows:
  - ‘In the case of humans, the reference to social surroundings in the definition of environment in subsection (1) is a reference to aesthetic, cultural, economic and other social surroundings to the extent to which they directly affect or are affected by physical or biological surroundings.’
- Social surroundings has a narrow meaning – will return to this.



- S258 - definitions

- environment includes:

- (a) ecosystems and their constituent parts, including people and communities; and
- (b) natural and physical resources; and
- (c) the qualities and characteristics of locations, places and areas; and
- (d) heritage values of places; and
- (e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d)..

- Section 3

- (1) The objects of this Act are:

- (a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance



- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
  - Matters of National Environmental Significance (MNES)
    - World Heritage areas
    - Commonwealth (National) Heritage places
    - Wetlands of international importance (listed under the Ramsar Convention)
    - Listed threatened species and listed ecological communities
    - Listed migratory species (protected under international agreements)
    - Commonwealth marine areas
    - Great Barrier Reef Marine Park
    - Nuclear actions (including uranium mines)
    - Water resources (relating to coal seam gas development and large coal mining development)
  - Will return to these



What do you think are the top 4 environmental issues or concerns?



- UN Environment Program (UNEP)
- Seven programs
  - **Climate Action,**
  - **Chemicals and Pollutions Action,**
  - **Nature Action,**
  - Science Policy,
  - Environmental Governance,
  - Finance and Economic Transformations and
  - Digital Transformations
- Environmental, social and sustainability framework
  - **Biodiversity Conservation, Natural Habitats, and Sustainable Management of Living Resources**
  - **Climate Change and Disaster Risks**
  - **Pollution Prevention and Resource Efficiency**
  - Community Health, Safety and Security
  - Cultural Heritage
  - Displacement and Involuntary Resettlement
  - Indigenous Peoples
  - Labor and Working Conditions



- UNEP
- the triple planetary
  - climate change,
  - nature and biodiversity loss, and
  - pollution and waste
- Commonwealth SoE and key pressures
  - Climate change – climate shifts and extreme events
  - People – urbanisation, land clearing, pollution, recreational and tourism
  - Industry - transportation, resource extraction, industrial pollution, energy production
  - Invasive species and range shifts, including biosecurity
  - Indigenous governance, rights and access
- Other concerns
  - Cumulative impact assessment
  - Human health and wellbeing





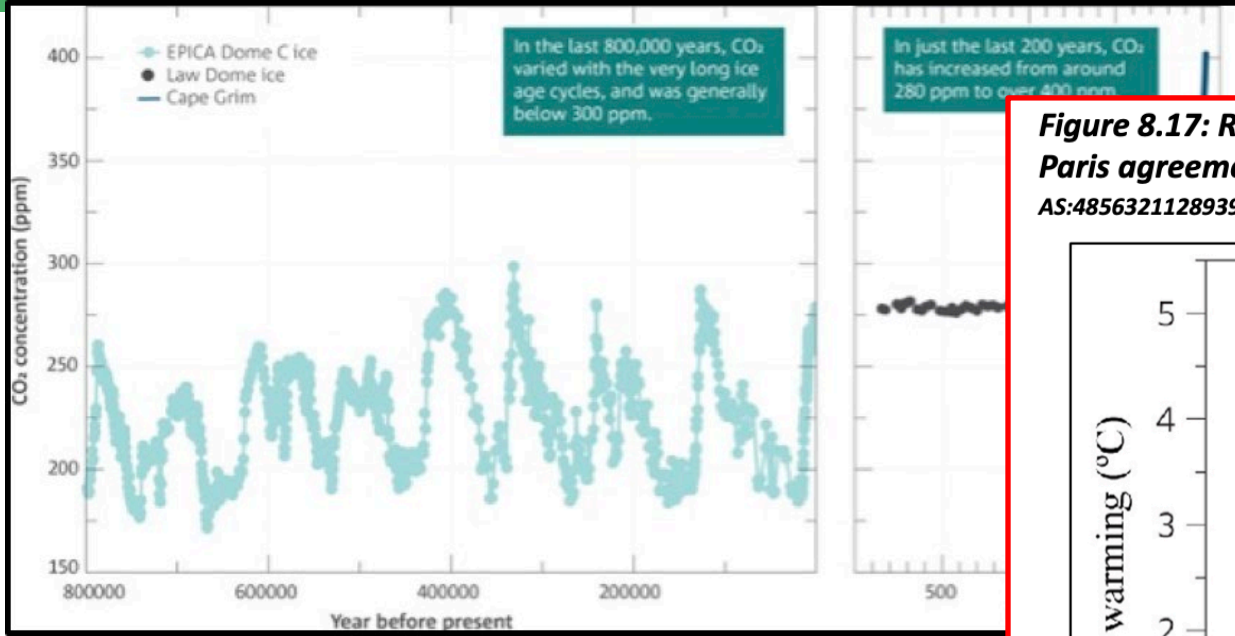


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# National environmental trends





**Figure 8.17: Representative Concentration Pathways and how we are tracking and the RCPs for the Paris agreement** (Source: <https://www.researchgate.net/publication/316307741/figure/fig1/AS:485632112893952@1492795126022/Global-temperature-increase-used-in-IPCC-AR5-presented-by-the-RCPs-The-values-in.png>)

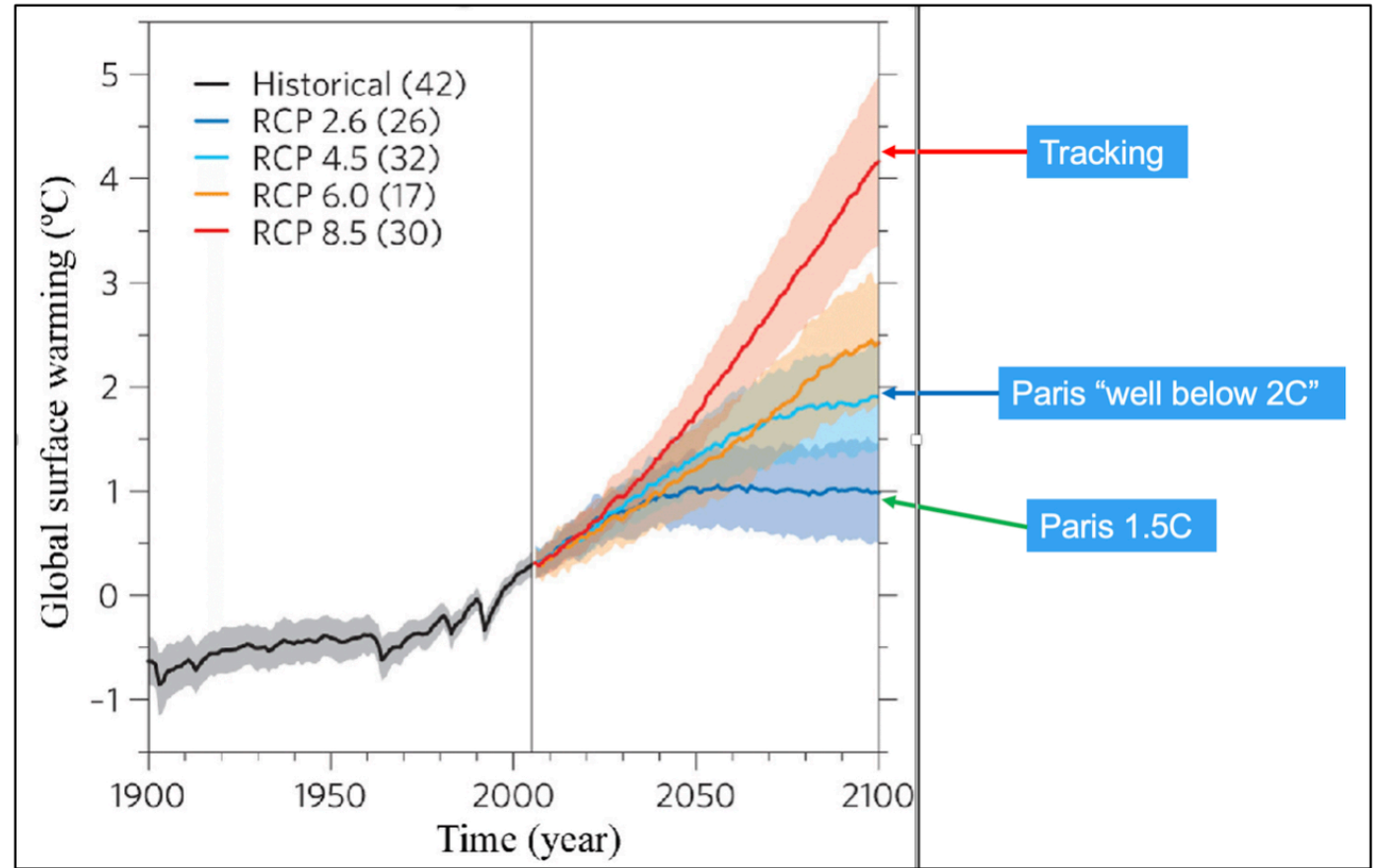
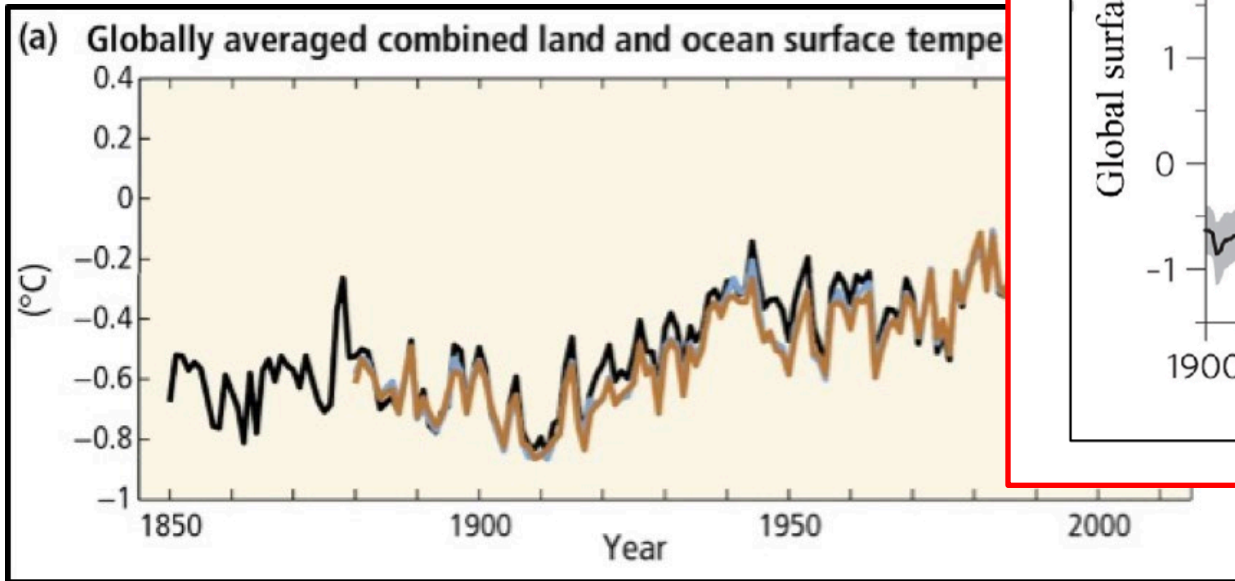
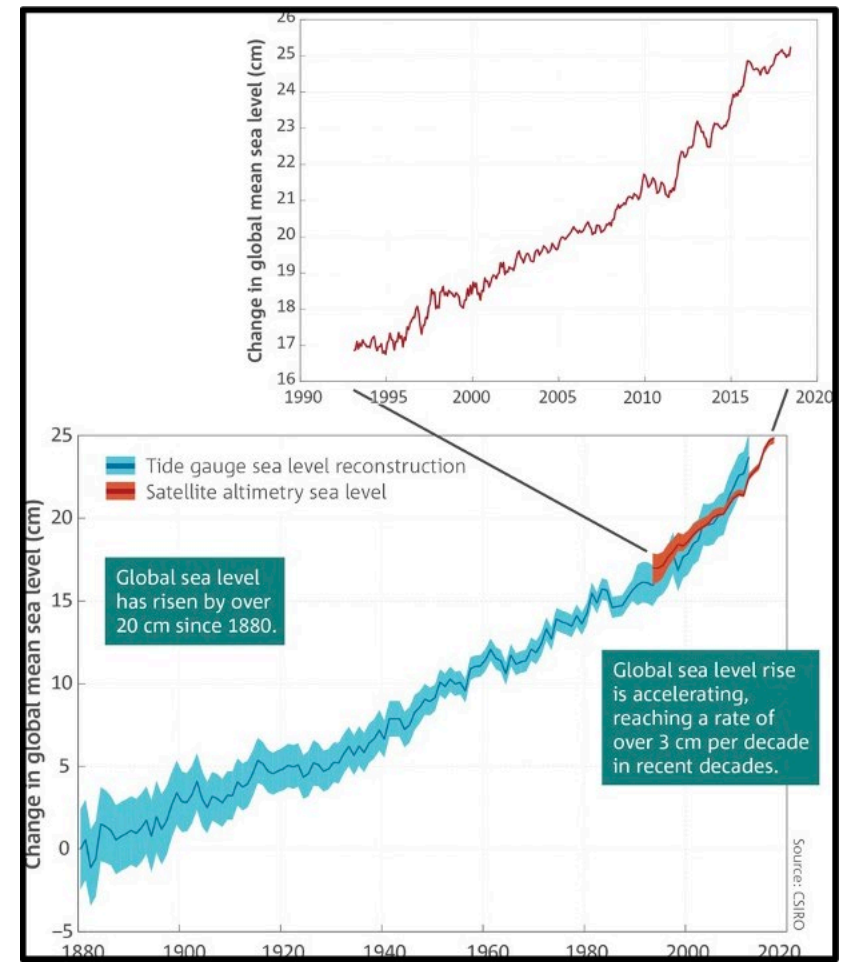
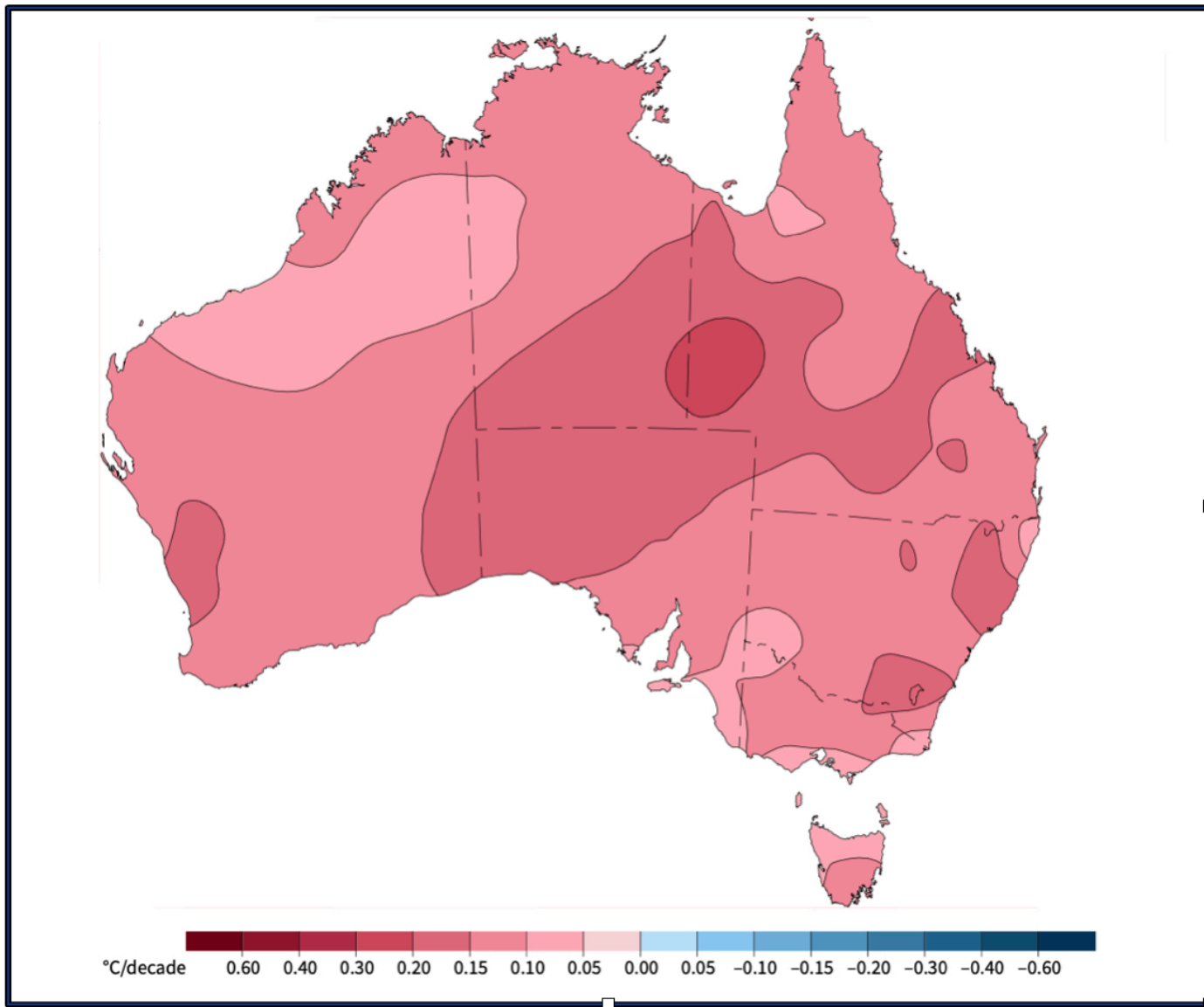
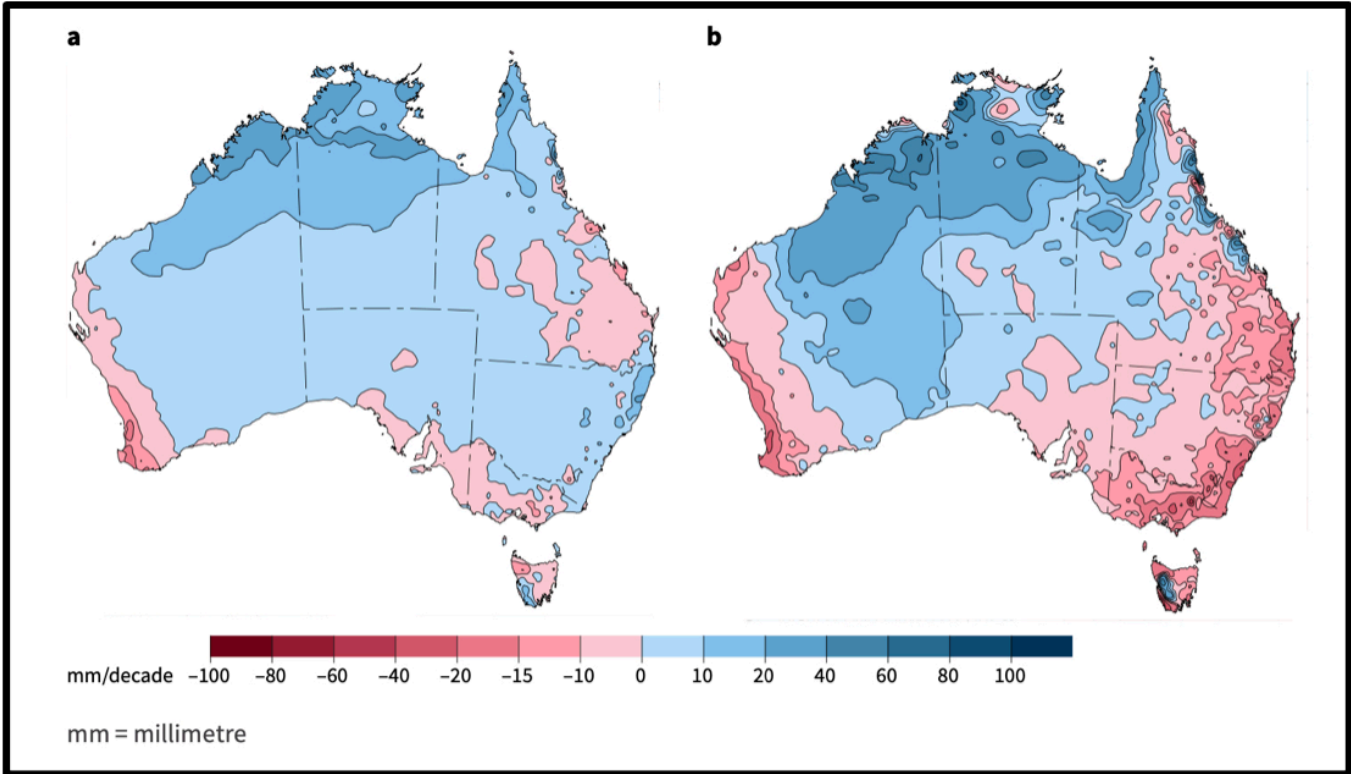


Figure 8.7: Trend in mean temperature, 1910-2020 (Source: Trewin, Morgan-Bulled et al. 2021).



**Figure 8.13: Australian rainfall trends: (a) 1900–2020; (b) 1960–2020 (Source: Trewin, Morgan-Bulled et al. 2021).**



- Australia's unique biodiversity

- 84% of plant species, 83% of mammal species, and 45% of bird species are only found in Australia
- At least 75 % of our native species remain undiscovered or undescribed, and 45% of Australia's land mass has not been fully biologically surveyed – rich in mineral resources

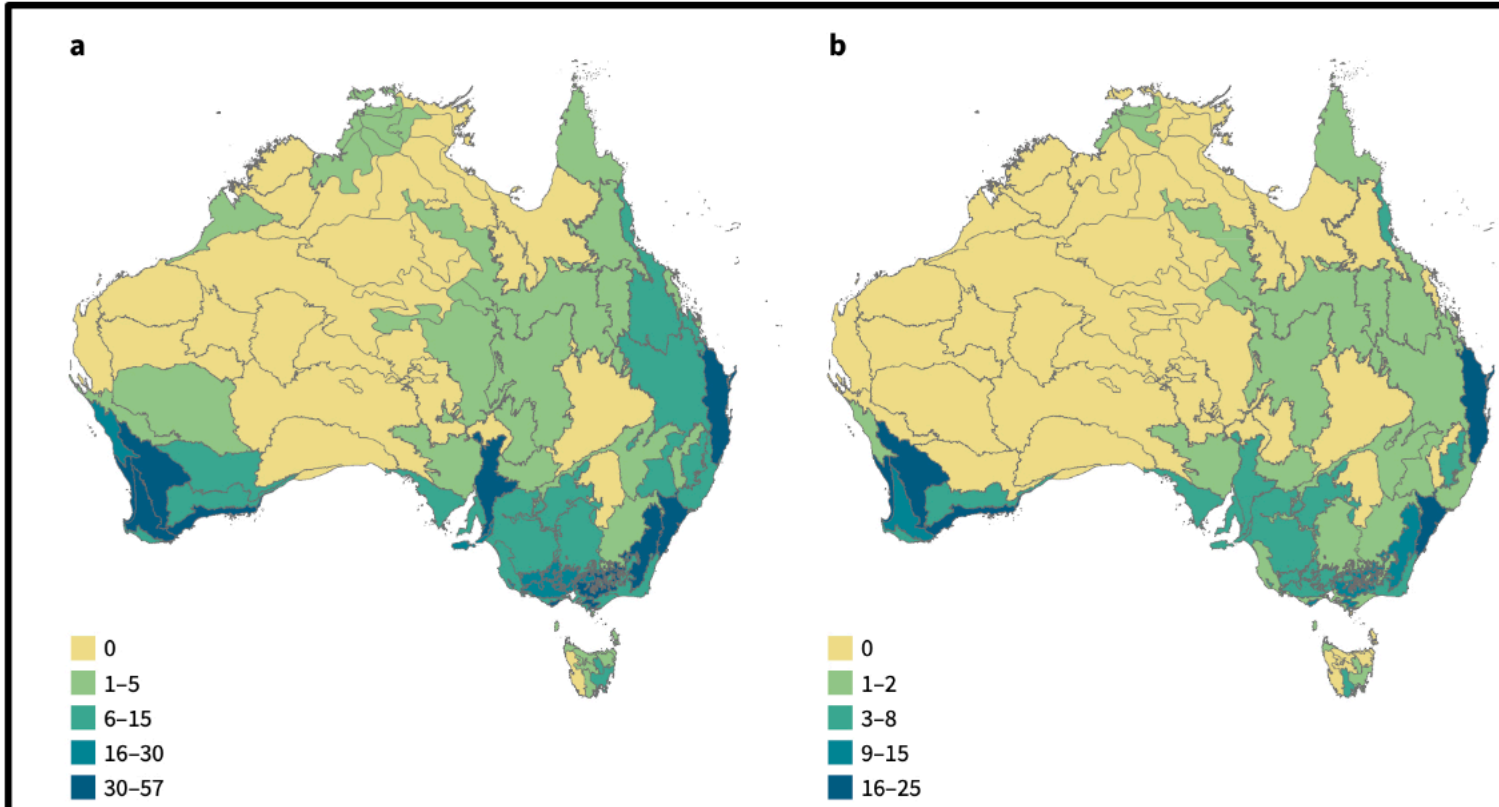


- A crisis?
- Globally (Worldwatch Institute)
  - 36% of all species are threaten with extinction;
  - 30% of amphibians, 21% of mammals, and 12% of bird species are threatened with extinction;
  - Of the 1,200 waterbird populations being monitored, 44% are in decline; and
  - Logging or land clearing in tropical forests is threatening over 60% of amphibian species.
- Australia (2021 State of the Environment report)
  - 100 Australian endemic species are listed as Extinct or Extinct in the Wild since European settlement in 1788;
  - 168 animals are listed as endangered and 88 listed as critically endangered; and
  - 556 plants species are listed as endangered and 206 listed as critically endangered.





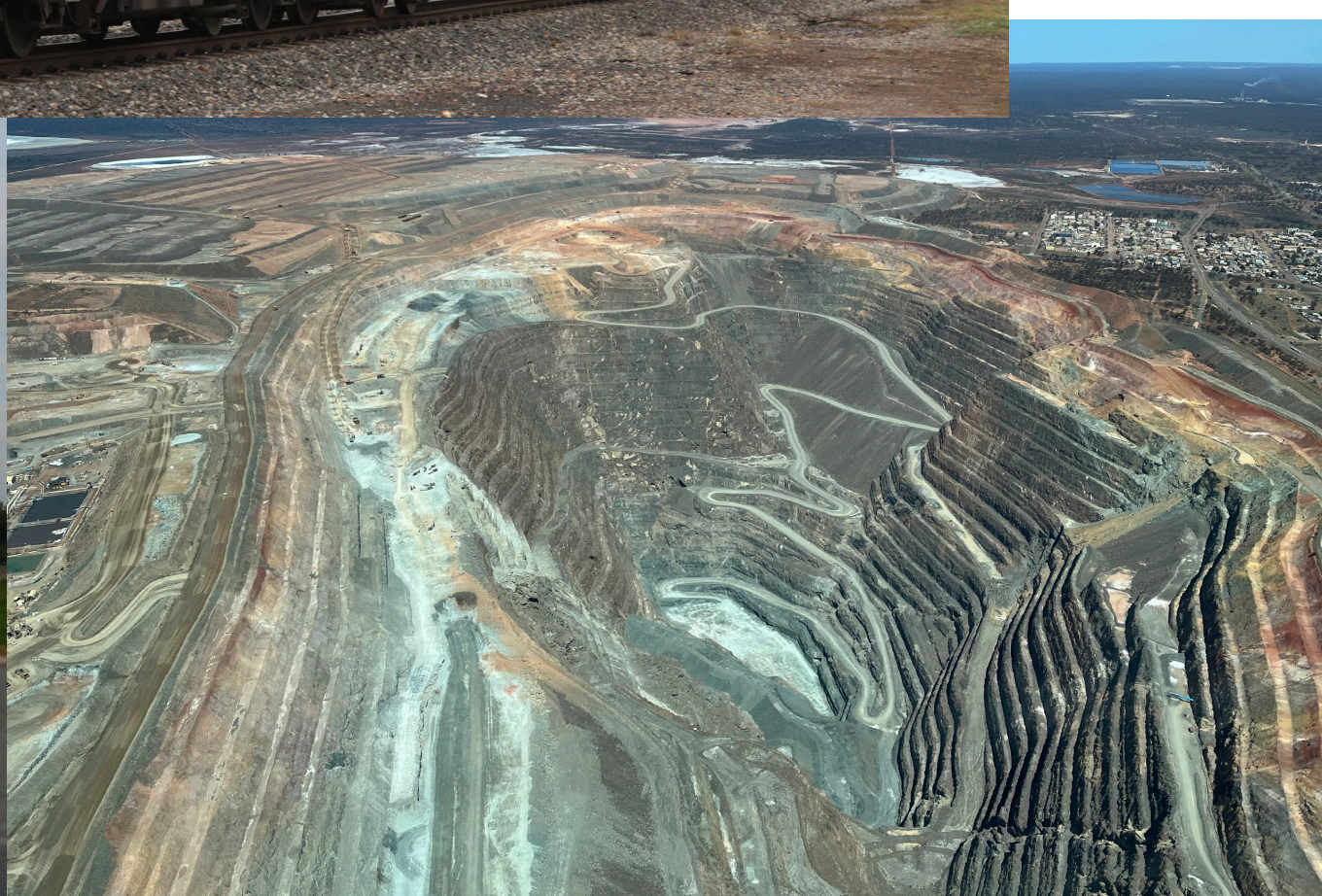
**Figure 3.1: Numbers of (a) declining and (b) imperilled (threatened) plant species per bioregion in Australia.**



Note: Imperilled species include those for which continuing declines are documented, suspected or projected across all populations, and the species occurs in low numbers (typically <2,500) with extinction possible in the medium term (10–100 years) OR continuing declines are documented and the species is extremely rare (known from <250 individuals and/or a single population) with high extinction risk within the next 10 years.

Source: Silcock & Fensham (2018). Republished with the permission of CSIRO Publishing, from *Australian Journal of Botany*, CSIRO (Australia) Academy of Science, 2018; permissions conveyed through Copyright Clearance Center, Inc. © CSIRO Publishing







# Invasive species





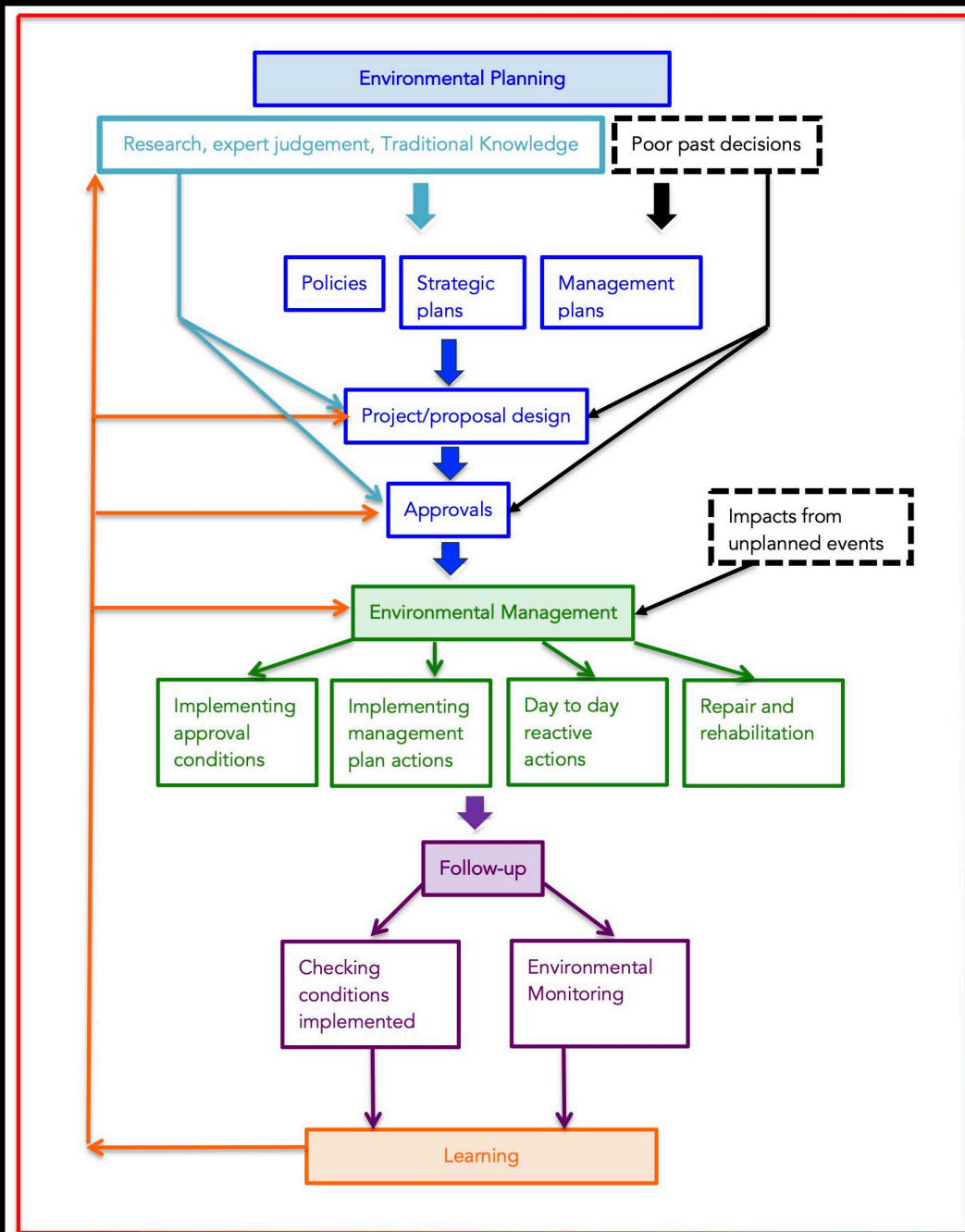
- System
  - A set of components that interact and function as a whole
- Global Earth Systems
  - Climate, atmosphere, land, coastal zones, ocean
- Ecosystem
  - A natural system consisting of a community of organisms and its physical environment
- Systems approach to environmental science
  - Helps us understand how human activities effect global environmental parameters



- Biology
- Ecology
- Geography - landscapes
- Chemistry – water and air quality
- Geology -
- Physics and mathematics - modelling
- Economics – pricing the environment
- Sociology
  - human behaviour, conflict management, and values
- Demography
- Politics and decision making



# Environmental Protection





You now should have a better understanding of ...

- What constitutes the environment
- Why the environment is important
- The world and Australia environmental situation – pressures
- The scope of environmental protection
- What is environmental management and its importance

