

6 The environment movement

6.1 Overview

The environment movement

Earth is very big. Why does it need people to fight on its behalf to protect the environment?

6.1.1 Links with our times

Since the early 1900s, more visionary world leaders, as well as organisations and individuals, have taken an increasing interest in the environment, recognising a need to preserve it for future generations. This awareness of the vulnerability of Earth's environments to human impact intensified in the 1960s as the modern globalised world began to take shape. The dramatic photographs sent back to Earth from the Apollo 8 moon mission in 1968 showed a beautiful but fragile planet from a perspective never seen before by humankind, mobilising many to change their thinking. Astronomer Carl Sagan echoed this new awareness when he said in 1994, 'Our planet is a lonely speck in the great enveloping cosmic dark. In our obscurity — in all this vastness — there is no hint that help will come from elsewhere to save us from ourselves. It is up to us.'



on Resources



eWorkbook Customisable worksheets for this topic



Video eLesson The environment movement (eles-2618)

LEARNING SEQUENCE

- 6.1 Overview
- 6.2 Examining the evidence
- 6.3 The national park movement
- 6.4 Growing impacts on the environment
- 6.5 The contemporary environment movement

6.6 Defending the environment

6.7 The Atomic Age

6.8 Global environmental issues: responses

6.9 Australia's environmental future

6.10 **SkillBuilder:** Conducting a historical inquiry

6.11 **Thinking Big research project:** Climate change action — the view from 2120

6.12 **Review**

online only

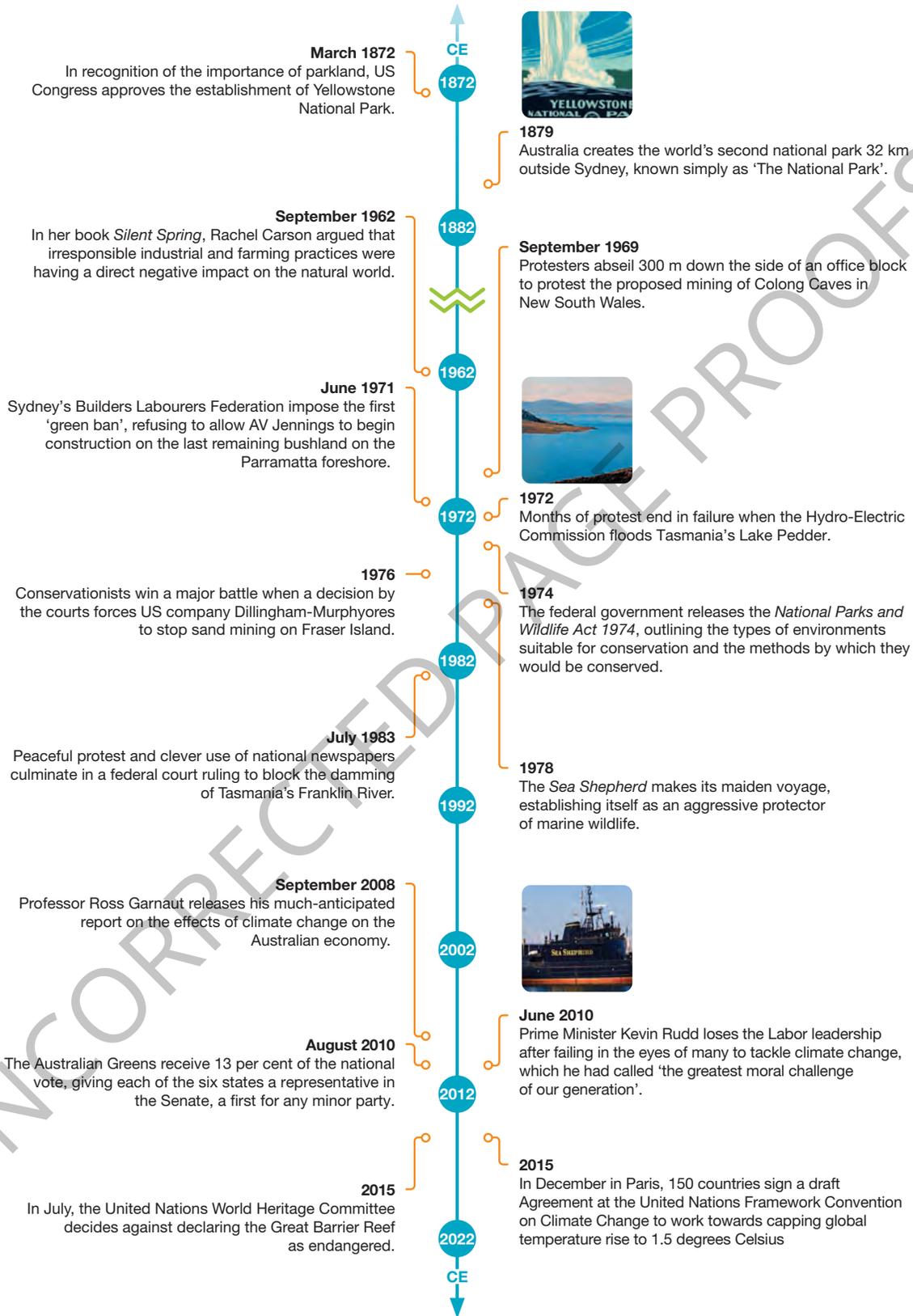
online only

online only

To access a pre-test and starter questions, and receive immediate, **corrective feedback** and **sample responses** to every question, select your learnON format at www.jacplus.com.au.

UNCORRECTED PAGE PROOFS

SOURCE 1 Timeline of the environment movement from the 1870s to the present



6.2 Examining the evidence

6.2.1 How do we know about the environment movement?

Around the turn of the twentieth century, with the **Industrial Revolution** in full swing, environmentalists attempted to gain support for wilderness preservation. However, it would be the 1960s before the broader public would begin to seriously re-examine their relationship with the natural world. This change was largely due to the influence of scientists, writers and artists, who shed light on the damage humans were doing to the environment. As the modern environment movement grew, organisations were established to promote the preservation, restoration and improvement of the natural environment. The record of their protests and actions, as well as works inspired by this awareness of the importance of the environment, offer us many sources to investigate when we seek to know about the environment movement.

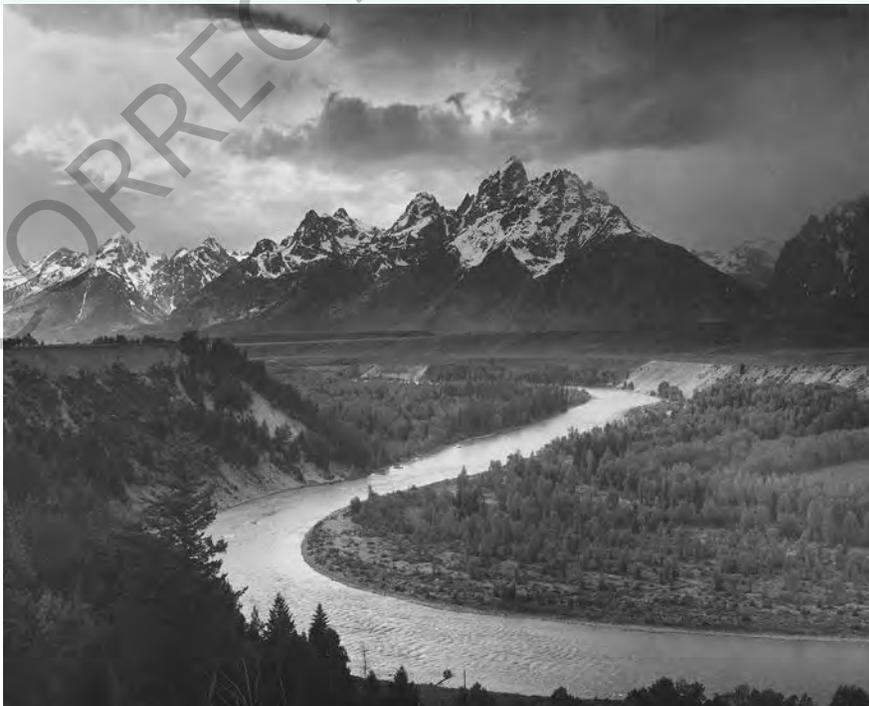
6.2.2 Visual and text sources

Many dedicated individuals, groups and organisations have contributed to the range of sources available for a study of the rise of the environment movement.

Photographs

As visual sources, photographs have the power to change people's perceptions in a way that words rarely can. The environment movement has benefited from the keen eye and compassion of photographers such as the American Ansel Adams, Lithuanian-Australian Olegas Truchanas and his protégé Peter Dombrovskis. Viewers are free to examine photographs and interpret the feelings they invoke. As Ansel Adams said, 'there are two people in every photograph: the photographer and the viewer'. In this way, photography has had a significant impact on environmental awareness and the environment movement itself, becoming part of a historical record.

SOURCE 1 Taken by famous American photographer and environmentalist, Ansel Adams, in 1942, this image is one of many that captured the raw beauty of nature. Adams's work helped expand the American national park program.



Text sources

Since the environment movement began, public perceptions of our relationship with the natural world have also been influenced by academic and popular writers, who have expressed their views in fiction and non-fiction, books, articles, letters, poems and songs.

Official reports

As important as creative expression has been in inspiring people to change their attitudes towards the environment, changes to government policy are often guided by official reports by trustworthy sources. These reports contain facts and figures; sometimes they may include quotes from people directly affected by the situation being investigated. If the report is to be considered reliable, it should be written by an independent organisation, while any contributors must be qualified to examine the evidence. Official reports that meet these criteria are useful not only to government, but to academics, reporters, historians and the general public.

SOURCE 2 Launched in 1970, *The Mother Earth News* offered concerned citizens practical advice on how to live a more sustainable life. From humble beginnings, it would go on to influence generations of do-it-yourself environmentalists and grassroots activists with its 'advice for wiser living'.



SOURCE 3 The United Nations Office for the Coordination of Humanitarian Affairs (OCHA) oversees the Joint Environment Unit. Since its inception in 1996, this unit has been responsible for investigating and reporting on environmental emergencies and natural disasters. This is an excerpt from the unit's report into the Philippines' Marinduque Island Mine Disaster.

The U.N. Mission team arrived in the Philippines on 26–27 April 1996. During five days, the team remained in the area to carry out the assessment. The team inspected the affected areas, interviewed local residents and government officials and collected samples for chemical and physical analysis. It met subsequently with the various involved actors to discuss the results of their findings . . . Based on the assessment, the U.N. Mission team concluded that:

- The Makulapnit and Boac River system has been so significantly degraded as to be considered an environmental disaster;
- The aquatic life, productivity and beneficial use of the rivers for domestic and agricultural purposes are totally lost as a result of the physical process of sedimentation;
- The coastal bottom communities adjacent to the mouth of the Boac River are also significantly degraded as a direct result of smothering by the mine **tailings**;
- There is no evidence of acute poisoning in the exposed population due to the mine tailings;
- There is an increased health and safety risk due to immersion and flooding as a result of the very large volume and physical properties of the mine tailings, should they be mobilized during the wet season; and,
- Concentrations of trace metals in the mine tailings were not sufficiently high to represent an immediate toxicological threat.

DISCUSS

'Visual sources such as photographs have more influence on public perception of environmental issues than the written word.' Discuss whether you agree or disagree with this statement. **[Critical and Creative thinking]**

6.2 EXERCISES

Historical skills key: **HS1** Remembering and understanding **HS2** Sequencing chronology **HS3** Using historical sources as evidence **HS4** Identifying continuity and change **HS5** Analysing cause and effect **HS6** Determining historical significance

6.2 Exercise 1: Check your understanding

1. **HS1** List as many examples of sources that you can think of that would provide evidence about the history of the environment movement.
2. **HS1** What revolution was in full swing around the turn of the twentieth century?
3. **HS1** What did Ansel Adams mean by this statement: 'There are two people in every photograph: the photographer and the viewer.'
4. **HS1** What did *The Mother Earth News* provide its readers?
5. **HS1** Read **SOURCE 3** and fill in the missing words to complete the paragraph below.

In order to assess the extent of damage caused by the Marinduque Island Mine Disaster, the UN Mission team spent _____ days in the affected area. During this time, they _____ affected areas; spoke to _____ and government officials and collected samples for _____ and physical analysis. Based on their assessment, they concluded that the river system had been so significantly _____ that the situation could be considered an environmental _____.

6.2 Exercise 2: Apply your understanding

1. **HS3** Examine **SOURCE 1**. What emotions does the image invoke? How could images such as this have benefited the environmental movement?
2. **HS3** Examine **SOURCE 2**. What elements (text and visual design) of the cover tell you the magazine deals with the subject of the environment?
3. **HS3** **SOURCE 3** describes the process by which a UN Mission team assessed the extent of the Marinduque Island Mine Disaster. According to its findings, what do you think would have been the largest impacts on the local people and wildlife?

4. **HS5** Explain how academic papers and reports from government and non-government organisations might influence environmental policy and public behaviours.
5. **HS6 SOURCE 1** is a black and white photograph. Consider why a black and white photograph of a natural environment taken in 1942 might remain relevant to the environment movement more than 70 years later. Try these questions in learnON for instant, corrective feedback. Go to www.jacplus.com.au.

6.3 The national park movement

6.3.1 America leads the way

Each year, more than 100 million visits are recorded at the 500 national parks scattered across Australia. On bush walks or camping trips, both Australian and international tourists spend hours experiencing the unique natural features of our continent. In the United States of America, the home of the national park, visitor statistics are even more impressive. As designated areas focused on environmental protection, national parks play a crucial role for the plants and animals protected within them. Yet these parks also have a strong influence on people and communities, providing rare havens of natural beauty and tranquillity.

National parks first emerged in North America. Since settling in America, the population had moved westward from the Atlantic coast, shedding much of their European heritage as they went. By the mid 1800s, the majority of America's indigenous people had been driven out of their traditional lands and placed on **reservations**. America's wilderness was conquered; its trees felled on a previously unimaginable scale to be sold for construction and to make way for agricultural development; and millions of wild bison hunted almost to extinction. In 1864, George P. Marsh released his groundbreaking work *Man and nature*, in which he argued that humans were a destructive force upon the environment, and that they must stop land clearance in the name of industrialisation and work to restore 'wild nature'.

Yellowstone, the world's first national park

Yellowstone National Park was signed into law by United States (US) President Ulysses S. Grant on 1 March 1872. Comprising more than 2 million acres of land in Montana and Wyoming, much of Yellowstone falls within an ancient volcanic caldera, a natural cauldron formed by the collapse of land after a volcanic eruption. It contains spectacular mountains, petrified forests, waterfalls, **geysers** and North America's largest high-altitude lake. It is also home to a huge range of fish, birds, insects and animals, including black bears, grizzly bears, buffalo, mountain lions and grey wolves.

With such a vast range of flora and fauna (plants and animals), the park truly embodied what George Marsh had referred to as 'wild nature'. However, Yellowstone was not set aside merely to protect these natural wonders. The world's first national park was heavily promoted by the American railroad industry, which had made a major financial investment in linking the country by rail, and saw tourism as one way to recoup its costs. The public responded enthusiastically, with about 50 000 tourists making the trip to Yellowstone each year, an early example of **ecotourism**.

After witnessing the impact of humans upon the environment as a boy, Wisconsin-born John Muir believed that the battle to conserve the natural world was a battle between right and wrong. In 1867, he set out on foot to explore America's wilderness. Of California's Yosemite, he wrote, 'No temple made of hands can compare'. But Yosemite was under threat from logging. Through his letters and articles, Muir

SOURCE 1 Preservationists such as John Muir objected to the logging of majestic trees like this one, a giant sequoia, the first of which was felled in 1853.



successfully lobbied the government to establish Yosemite National Park in 1890. Two years later, he would also found the Sierra Club, one of America's most important wilderness societies.

6.3.2 Australia and other countries follow

In 1879, Australia attempted to follow the Yellowstone model by setting aside about 18 000 acres of bushland outside Sydney to create the world's second national park. The National Park (renamed Royal National Park in 1955) interpreted Marsh's concept of 'preservation' very loosely, however. Native trees and mangroves were removed to make way for thousands of ornamental trees, and rabbits, foxes and deer were released for hunting. In the decades that followed, Sydneysiders made the 32-kilometre journey from the city to enjoy the amusements offered, use the dance hall or take a boat ride around the lake. The park was affectionately referred to as 'the lungs of Sydney'.

SOURCE 2 In 1968, German dignitaries Otto Kersten (right) and Mr and Mrs Brueckmann (centre) discuss an Indigenous rock carving of a kangaroo in Royal National Park with one of the park's guides (left).



DID YOU KNOW?

The traditional Indigenous owners of the land on which Royal National Park was established are the Dharawal (Tharawal) people. Together with other tribes in the area, they were known as the 'Eora' people, meaning 'here' or 'from this place'. Rock engravings in the park highlight the Dharawal's connection to the land.

SOURCE 3 Today, tourists have found new ways to enjoy Royal National Park, sometimes at great risk to their lives.

Instagram and tourism campaigns have led to ill-prepared visitors 'inundating' Sydney's Royal National Park, arriving with no knowledge of surf conditions or bushwalking, a local resident has warned.

Three people were treated for minor injuries after being knocked over by a large wave that crashed over the rock shelf at the popular Figure 8 rock pool in the national park on Saturday afternoon.

It is a scene that Royal National Park residents saw coming.

'It [Royal National Park] was dedicated for a small population of Sydney as a small recreational area, but we now have 2.5 million people coming to the park [each year]', Coastal Cabins Protection League and resident Helen Voysey said.

'There is limited access and now we're inundated by car visitors who are not serious bush walkers and who don't understand what a national park is about or the surf.'

'They want to get to the place that's advertised and they don't have the understanding of how dangerous the coastal fringe is.'

The Figure 8 Pools are on a rock ledge south of Burning Palms Beach and are accessed via a steep 3.5 km walking track.

The showpiece rock pool is a perfectly formed figure eight shape, roughly six metres in length.

Information online stresses the importance of visiting the site at low tide, but waves can still break over the ledge during high surf like that seen over the weekend.

With Instagram, areas that were once secret spots are now repeatedly published with a map location, and the Figure 8 Pools has been a social media sensation.

Like fellow Royal National Park attraction Wedding Cake Rock, Figure 8 Pools has become a fashionable but risky spot to visit and share photos of.

Kane Weeks, from the National Parks and Wildlife Service, said social media had had a significant influence on how the organisation managed the site.

'The visitation to Figure 8 has increased over the last 12 months, but in the last month we've seen a dramatic increase at the site', he said.

'We've had to upgrade parking and try to limit the amount of people going to the site because of the risks.'

Mr Weeks said a visit to the site would take about four hours return over challenging terrain.

'We've got information on the national parks website that clearly indicates you need to go at low tide, but it was the swell and height of the wave that people got caught out with [at the weekend].'

'[Social media] brings a whole new demographic to the Royal National Park with young people and international visitors, but they need to understand the safety concerns for the site.'

Other parks were established around the world to preserve the wilderness. In Canada, 6641 square kilometres were set aside by the government in 1885 for the Banff National Park. Since this time, Banff has been grouped with other parks in the area to form the Canadian Rocky Mountain Parks. In New Zealand, Ngāti Tūwharetoa, a Maori tribe whose tribal lands covered the central North Island, gifted to the Crown the mountain summits of Tongariro, Ngauruhoe and Ruapehu in 1887 as a way of saving these sites from being sold to European settlers. By donating these areas to the British government, the tribe protected their use for future generations. These peaks were of major significance to the belief system of the Ngāti Tūwharetoa, one of whose sayings is, 'Te ha o taku maunga ko taku manawa' ('The breath of my mountain is my heart'). These words are now inscribed upon the entrance to the park for all visitors to see. This gift would become the basis for Tongariro National Park, the country's first national park, and the world's fourth.

SOURCE 4 On 23 September 1887, this letter was sent to the Honourable John Ballance (the Native Minister) by chief Te Heuheu, confirming that the mountains would be given to the Crown in order to make a national park.

Friend I have signed the deed laid before me by Mr Lewis for the purpose of confirming the gift of the land as a national park in accordance with the wish of the Government, and to fulfil my word spoken to you at Rotorua. I have however, two words to make known to you.

First — my father Te Heuheu Tukino, who was overwhelmed at Te Rapa, is laid on the mountain, and it is my wish that he be removed to some other place. He was, as you know, a chief of very high rank, and it is right that the Government should erect a tomb for him, because both my people and I are unable to do so. Your friend Mr Lewis has agreed to this word of mine, subject to your approval.

The second word is, that I am an old man, and the affairs of my people are conducted by my only son, Tureiti Te Heuheu Tukino. It is my wish that he be authorised, that is to say his name be inserted in the National Park Act; . . . These are my requests to the Government on my signing the deed giving Tongariro and Ruapehu to the Government as a National park, for the use of both Natives and Europeans.

6.3 EXERCISES

Historical skills key: **HS1** Remembering and understanding **HS2** Sequencing chronology **HS3** Using historical sources as evidence **HS4** Identifying continuity and change **HS5** Analysing cause and effect **HS6** Determining historical significance

6.3 Exercise 1: Check your understanding

1. **HS1** List some of the effects of the westward movement of America's population in the 1800s.
2. **HS1** Explain the geographical location and features of Yellowstone National Park.
3. **HS1** How did the American railroad industry assist the development of Yellowstone National Park?
4. **HS1** Was Yosemite National Park founded before or after the establishment of Yellowstone National Park?
5. **HS2** Construct a timeline to show the chronological sequence of the establishment of the national parks mentioned in this section.
6. **HS1** The Ngāti Tūwharetoa, tribe gave the Tongariro and other mountain peaks to the British government. Identify and explain why they made this gift.

6.3 Exercise 2: Apply your understanding

1. **HS3** Study **SOURCE 1**.
 - (a) What does the source suggest about what the natural world meant to America's early industrialists?
 - (b) What techniques were used to fell trees such as the one pictured in **SOURCE 1**? What evidence is there in the photograph to support your observations?
2. **HS3** **SOURCE 2** shows visitors standing on top of and touching ancient Indigenous rock engravings.
 - (a) Why were these visitors shown these engravings?
 - (b) Do you believe this behaviour is appropriate? Why or why not?
 - (c) Do you believe this would be allowed today?
3. **HS3** Read **SOURCE 4**.
 - (a) Explain the two requests made by Chief Te Heuheu in **SOURCE 4**. What do his requests suggest about the balance of power between the Ngāti Tūwharetoa and the Europeans?
 - (b) What evidence is there in **SOURCE 4** to indicate how Chief Te Heuheu felt about gifting his land to the British government? Look for key words and consider language choice and tone.
4. **HS3** From the sources in this subtopic, what conclusions can you draw about the differing ways in which people viewed the environment in the late 1800s? Use specific examples in your response.
5. **HS4** How did the national park movement change the way in which natural environments were regarded by the public?
6. **HS3** After reading **SOURCE 3**, consider how the historical uses of Sydney's Royal National Park might differ from the ways in which it is used today. In your opinion, does the type of activity described in **SOURCE 3** protect or endanger the environmental status of the park?
7. **HS5** Explain how the national park movement in the 1800s might have been influential in the development of modern environmentalism.
8. **HS4** Both the American and Canadian railroad industries were heavily involved in the national park movement. Do you think there are similar relationships between developers and environmental movements today?
9. **HS6** Was the National Park in New South Wales a good example of George P. Marsh's vision of preservation? Explain your response.
10. **HS6** Explain why the gifting of the peaks and the two requests made by Chief Te Heuheu in **SOURCE 4** have historical significance.

Try these questions in learnON for instant, corrective feedback. Go to www.jacplus.com.au.

6.4 Growing impacts on the environment

6.4.1 Impacts resulting from the Industrial Revolution

The Industrial Revolution brought many economic and social changes. Inevitably, rapid and ongoing industrialisation and urbanisation had a significant and transformative effect on many environments that had remained largely unchanged for many generations.

While George P. Marsh, John Muir and others (see subtopic 6.3) were effective in raising awareness of the need to set aside and protect unspoiled tracts of land and water, the world's urban centres were growing at an unprecedented rate as a result of rapid industrialisation and population growth. In 1800, only 3 per cent of the world's population lived in cities; just a century later, that number had risen to 14 per cent, with 12 cities of more than 1 million people. Although London had the highest population with almost 7 million, three of the world's largest cities were located in America, the 'land of opportunity'. The impacts of industrialisation and urbanisation were being felt around the world. Today, these impacts are intensified many times, with 54 per cent of the world's population living in cities. There are over 300 cities with at least 1 million inhabitants.

The cost of urbanisation

As the cities of the world swelled, factories (and later cars) spewed toxins into the atmosphere, while biological and industrial waste was commonly discharged directly into waterways, sometimes the very waterways that were meant to serve the people of the city. This gave rise to a number of water-borne epidemics including typhoid and cholera.

Following the Meat Cutters strike of 1904 in America, during which 56 000 members of the Amalgamated Meat Cutters Union battled with the 'Beef Trust' — a small group of powerful companies — for fair pay, Upton Sinclair wrote *The Jungle*, a novel that examined life for workers in Chicago's meatpacking district. Its bleak depiction of city life was an eye-opener for its readers, and raised awareness about some of the social and environmental costs of the industrial revolution.

After reading *The Jungle*, President Theodore Roosevelt sent a commission to investigate its claims; less than six months later, he signed into law two Acts designed to clean up the industry, the Pure Food and Drug Act and the Meat Inspection Act.

SOURCE 1 In this excerpt from Upton Sinclair's novel *The Jungle*, Jurgis Rudkus and his family, recent immigrants from Lithuania, are transported by train to Chicago's meatpacking district, where they become, in Sinclair's words, 'wage slaves of the beef trust'.

A full hour before the party reached the city they had begun to note the perplexing changes in the atmosphere. It grew darker all the time, and upon the earth the grass seemed to grow less green. Every minute, as the train sped on, the colors of things became dingier; the fields were grown parched and yellow, the landscape hideous and bare. And along with the thickening smoke they began to notice another circumstance, a strange, pungent odor. They were not sure that it was unpleasant, this odor; some might have called it sickening, but their taste in odors was not developed, and they were only sure that it was curious. Now, sitting in the trolley car, they realised that they were on their way to the home of it — that they had traveled all the way from Lithuania to it. It was now no longer something far off and faint, that you caught in whiffs; you could literally taste it, as well as smell it — you could take hold of it, almost, and examine it at your leisure. They were divided in their opinions about it. It was an elemental odor, raw and crude; it was rich, almost rancid, sensual, and strong. There were some who drank it in as if it were an intoxicant; there were others who put their handkerchiefs to their faces. The new emigrants were still tasting it, lost in wonder, when suddenly the car came to a halt, and the door was flung open, and a voice shouted — 'Stockyards.'

6.4.2 Exploiting the developing world for resources

The damage caused by rampant industrialisation was illustrated most clearly in places that were exploited for their natural resources in the name of increasing industrial production and trade. In many cases, this exploitation was carried out by powerful **colonial nations** in their Asian or African colonies. Many of these colonial powers lacked sufficient access to natural resources to fuel their industrial growth. To alleviate resource shortages at home, they sought to exploit their respective colonies abroad where an abundance of highly sought-after raw materials might be found.

The experience of the Congo Free State in Africa can be used as an example of colonial resource exploitation. Between 1855 and 1908, the Congo Free State (now known as the Democratic Republic of Congo) was controlled by Belgium's King Leopold II. The king claimed that he wanted to bring

infrastructure, laws and religion to Central Africa in order to 'civilise' it. Instead, over more than half a century, the king's forces plundered the country for resources, including ivory, copper and rubber. The latter was used to feed the growing rubber boom, which was brought about by the world's growing need for automobile tyres and elastic to be used in clothing. As they exploited the Congo, Leopold's forces tortured and killed much of the native population. They also exploited the natural environment. In the Congo, rubber came from jungle vines; as these were cut down, the vines died, leading the resource to become more scarce. Similarly, in Peru, Brazil, Ecuador and Columbia, large swathes of rainforest were cleared to make way for rubber-tree plantations. Rubber barons grew rich by using the native Indian population as slaves and punished them harshly for failing to meet quotas. In some places, this led to the death of large parts of the indigenous population, meaning that whole cultures died due to this industry.

Sir Roger Casement, a former British consul in the Congo, worked hard to publicise these crimes in a series of reports to the British government between 1904 and 1911. The industry was changed as a result of international pressure. However, exploitation of the developing world continues to plague international trade to this day, with smaller, weaker countries often exploited for their environmental riches or cheaper workforce. Recent examples include logging of the Amazon rainforest by domestic and multinational corporations; Multinational corporations' exploitation of workers in 'sweatshops' throughout Asia; and China's exploitation of the South-East Asian region in its hunt for energy, including the development of 40 hydro-electric plants along the Mekong River in nations with lax environmental and labour laws, such as Burma and Thailand.

DID YOU KNOW?

According to some estimates, during Leopold's rule of the Congo from 1885 to 1908, the country's population fell from 25 million to 10 million. These estimates are difficult to verify because records were not accurately kept. Starvation, war, disease and a falling birth rate are suggested as reasons for the population fall.

SOURCE 2 In this *Punch* cartoon from November 1906, a Congolese man is entangled by the rubbery coils of a snake with the head of King Leopold II.



6.4.3 The impact of industrialisation and urbanisation on Australia

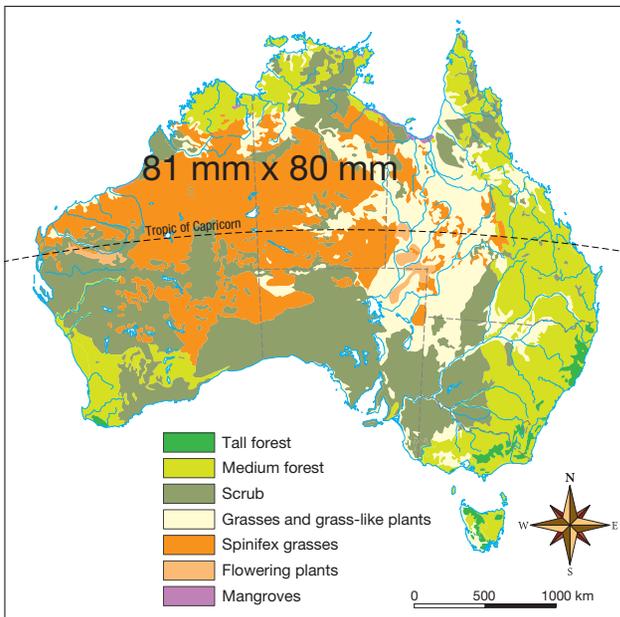
Vegetation

Before European settlement, most of Australia was covered by native species of vegetation, including shrub land, heath, grassland, woodland and forest. Since European settlement, around 13 per cent of this natural vegetation has been cleared to make way for our farms, cities and industries.

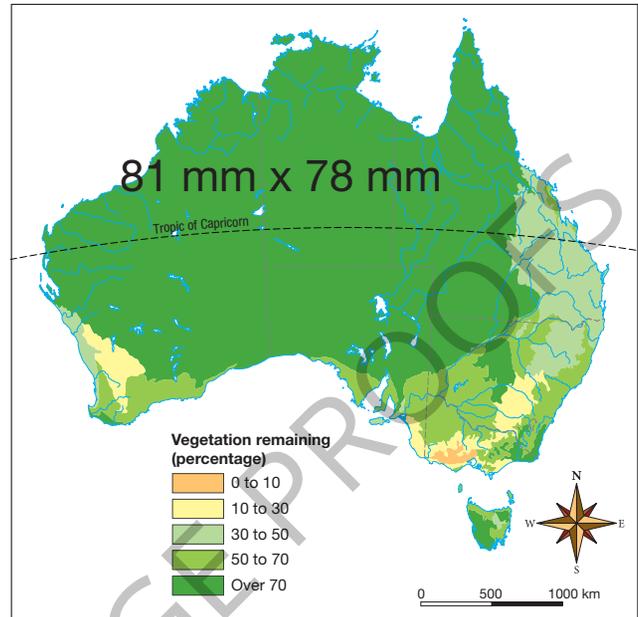
Forests, for example, not only provide a habitat for many species of native flora and fauna, but also contribute to water catchment. In Victoria, for instance, vegetation cover dropped over a period of 100 years from 88 per cent to less than 35 per cent of the state. According to the Department of Sustainability, Environment, Water, Population and Communities, between 1972 and 2004, around 8.4 million hectares of forest were cleared across the country. Today, nationwide, over half a million hectares of native vegetation is still being cleared each year. The largest percentage of this is in Queensland.

Another negative effect of **deforestation** has been fully appreciated only in recent decades. Because of our use of fossil fuels to power our homes and factories and to run cars, the amount of carbon dioxide in the

SOURCE 3 These maps show (a) a comparison of the vegetation on the Australian continent in 1788 when Europeans arrived and (b) the percentage of that vegetation remaining today.



Source: MAPgraphics Pty Ltd Brisbane



Source: MAPgraphics Pty Ltd Brisbane

atmosphere has been steadily increasing since the Industrial Revolution began. This is dangerous because carbon dioxide is a greenhouse gas, a gas that becomes trapped in the atmosphere and does not allow heat to escape, leading to a rise in global temperatures. Trees are natural carbon sequestrators, meaning that they have the ability to remove carbon dioxide from the atmosphere and store it within themselves. When trees are cut down, this ability is lost.

Conservational agriculture

In response to the key environmental issues of land clearance, deforestation and pollution, Australian farmers adopted a number of strategies from the 1960s onwards that demonstrated the advantages of environmentally friendly farming practices over industrialised farming. These included the back-to-the-land movement, permaculture and organic farming.

Back-to-the-land began in the United States at the beginning of the twentieth century, where it was popularised by the activist and author Bolton Hall. It relates to being self-sufficient and promotes practices such as growing your own food. In Australia, the movement appealed to members of the counter-culture movement of the 1960s, including hippies. Having set up farms in areas such as Nimbin in northern New South Wales, people farmed the land in an attempt to become self-sufficient.

SOURCE 4 Quotation from Bolton Hall (1854–1938) in *Three Acres and Liberty*, written in 1907

The time is not far distant when the builders of homes in our American cities will be compelled to leave room for a garden, in order to meet the requirements of the people. In the mad rush for wealth we have overlooked the natural state, but we see a healthy reaction setting in. With the improvements in steam and electricity, the revolutionizing of transportation, the cutting of the arbitrary telephone charges, it is becoming possible to live at a distance from our business. May we not expect in the near future to see one portion of our cities devoted entirely to business, with the homes of the people so separated as to give light, sunshine, and air to all, besides a piece of ground for a garden sufficient to supply the table with vegetables?

You raise more than vegetables in your garden: you raise your expectation of life.

As a pioneer of the Australian environment movement, Bill Mollison's concern for the state of Australian habitats was sparked when he began to notice rapid environmental changes in his native state of Tasmania. After studying psychology and environmental science, Mollison realised humankind needed to live in balance with the natural world. Together with one of his research students, David Holmgren, Mollison founded the **permaculture** movement. In recent years, the permaculture movement has grown significantly in Australia and across the world.

SOURCE 5 From *Introduction to Permaculture*, 1991, by Bill Mollison

Sitting at our back doorsteps, all we need to live a good life lies about us. Sun, wind, people, buildings, stones, sea, birds and plants surround us. Cooperation with all these things brings harmony, opposition to them brings disaster and chaos.

SOURCE 6 From *Permaculture: A Designer's Manual*, 1988, by Bill Mollison

. . . every society that grows extensive lawns could produce all its food on the same area, using the same resources, and . . . world famine could be totally relieved if we devoted the same resources of lawn culture to food culture in poor areas. These facts are before us. Thus, we can look at lawns, like double garages and large guard dogs, [and Humvees and SUVs] as a badge of wilful waste, conspicuous consumption, and lack of care for the earth or its people. Most lawns are purely cosmetic in function. Thus, affluent societies have, all unnoticed, developed an agriculture which produces a polluted waste product, in the presence of famine and erosion elsewhere, and the threat of water shortages at home.

Organic farming developed as a natural extension of the principles of permaculture, as it focused on working in harmony with nature rather than against it. It involves growing food that is pesticide-free, using natural fertilisers and pest controllers, and conserving water. The Organic Federation of Australia was established in 1998 to 'work in co-operation with all sectors of industry and government to develop the Australian Organic Industry from a niche industry into a major component of Australian agriculture and deliver benefits to consumers, producers and the Australian environment'. In recent years, organic farming requirements have expanded to include products that have not been genetically modified.

6.4 ACTIVITIES

1. Use your library and the internet to find out more about one of the current forms of exploitation of the developing world mentioned in this subtopic. Then compare it to what you have learned about Leopold II's exploitation of the Congo Free State. Based upon your research, decide how much has changed in the exploitation of the developing world for economic reasons in between the rule of King Leopold II and today.

Identifying continuity and change

2. 'Increasing urbanisation is the single most important environmental threat faced by the modern world.' Evaluate the accuracy of this statement in a persuasive essay of 600 words. You will need to conduct further research to find evidence. Ensure you evaluate each source for bias before formulating your own view. You could also conduct a class debate to explore the proposition.

Determining historical significance

6.4 EXERCISES

Historical skills key: **HS1** Remembering and understanding **HS2** Sequencing chronology **HS3** Using historical sources as evidence **HS4** Identifying continuity and change **HS5** Analysing cause and effect **HS6** Determining historical significance

6.4 Exercise 1: Check your understanding

- HS1** Identify and explain the ways in which urbanisation began to threaten natural environments during the early 20th century.
- HS1** What was the outcome of President Roosevelt's commission to investigate the meatpacking industry in Chicago after the Meat Cutter's strike of 1904?
- HS1** Why did colonial powers take resources from their overseas colonies?
- HS1** The period of Belgian control of the Congo Free State in Africa can be used as an example of colonial resource exploitation.
 - What was the main resource wanted by Belgium's King Leopold II?
 - What was this resource used for in the industrialising western world?
 - List two ways in which taking this resource could result in an impact on the natural environment.
- HS1** Is **SOURCE 2** a primary or secondary source? Explain.
- HS1** Consider the information and **SOURCE 3** maps in section 6.4.3.
 - Since the European settlement of Australia, what percentage of the continent's natural vegetation has been cleared?
 - Why has this clearing occurred?
 - Identify and explain three strategies Australian farmers used after 1960 to initiate environmentally friendly farming practices.
 - Why should we be concerned about loss of forests, both in Australia and other parts of the world?

6.4 Exercise 2: Apply your understanding

- HS3** Read **SOURCE 1**.
 - Whose perspective is detailed in the source?
 - SOURCE 1** is taken from a work of fiction. What might affect the validity of a work of fiction as a historical source?
 - SOURCE 1** appeals particularly to one of the human senses. Which sense is this?
 - Provide two examples of the sensual language used by the writer to describe the effect of the local environment on the immigrants.
 - How might this language indicate an attempt to position the reader to a particular viewpoint?
- HS3** Study **SOURCE 2**.
 - Where is the image depicted in the cartoon set? What element/s in the cartoon tell you this?
 - Identify and explain three elements (for example, use of symbols, appeal to the emotions) used by the cartoonist to convey their point of view.
 - What do you believe the cartoon says about King Leopold II and his impact upon the Congo Free State?
 - What might be depicted in a cartoon that represented King Leopold's point of view?
 - What are the strengths and weaknesses of this cartoon as a historical source?
- HS3** Study the maps in **SOURCE 3**.
 - Estimate the percentage of Australia covered by forest in 1788.
 - Identify which areas of Australia have fewer than 10 per cent of original forest remaining. Suggest reasons for this.
 - Identify which areas of Australia have had the least change to their 1788 vegetation. Suggest reasons for this.
- HS3** Using the quotations in **SOURCES 4, 5** and **6**, summarise the views expressed by Bolton Hall and Bill Mollison. In what ways are these views similar and different?
- HS2** Create a table listing the historical sources used in this subtopic in chronological order. In a second column, identify the theme or main idea presented in each source. Then in a paragraph, discuss what these themes have in common.
- HS3** Why are political cartoons useful historical sources? What might be their limitations?
- HS5** To what extent do you consider the Industrial Revolution the cause of the world's environmental issues? Draw a consequences wheel to show some of the effects of the Industrial Revolution on global environments.

Try these questions in learnON for instant, corrective feedback. Go to www.jacplus.com.au.

6.5 The contemporary environment movement

6.5.1 World events

The contemporary environment movement began in response to a wide range of issues, such as wilderness protection, anti-nuclear protests and chemical warfare in Vietnam. The movement also benefited greatly from the worldwide civil rights and anti-war movements of the 1960s and 1970s. During this period, there were widespread protest movements in favour of equal treatment of races, particularly in the United States. From 1962 to 1972, some countries faced social upheaval in response to what many people felt was an unjust war in Vietnam. These well-organised protest movements crossed social boundaries, bringing together people of all ages and walks of life. Consequently, people from different countries, including Australia, found themselves united in common causes, forming an organisational basis for powerful citizens' movements.

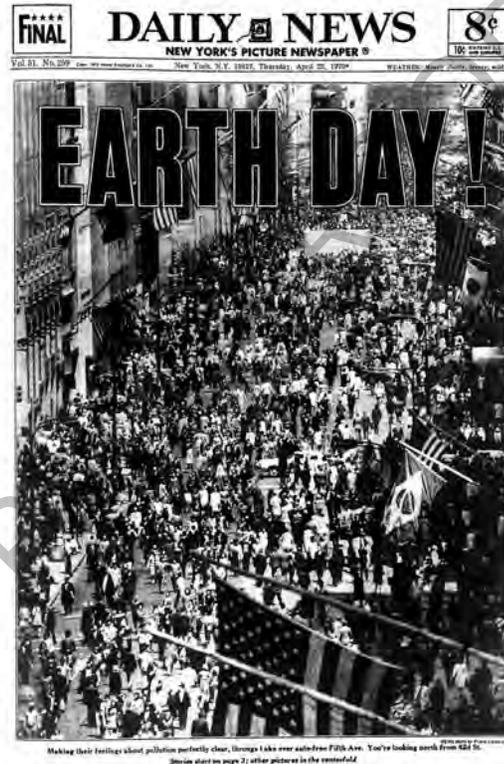
6.5.2 The influence of popular culture

As interest in the environment grew, conservationists, such as Jacques-Yves Cousteau and American lawyer and politician Ralph Nader, gave a public face to the environmental movement, becoming celebrities for the cause. Popular culture began to have an increasing effect on the rapid growth of the environmental movement as singers, photographers and writers highlighted the issue in mainstream popular culture.

Song lyrics

Growing awareness of negative environmental change formed the basis of songs such as 'Don't it make you want to go home' by Joe South and Marvin Gaye's 'Mercy mercy me (the ecology)' (1971). Gaye's song was both a critical and commercial hit, helping to raise the profile of the environmental movement. In the song, Gaye bemoans the impact humankind has on the natural world. 'Big yellow taxi' by Joni Mitchell, 'Eve of destruction' by Barry McGuire and 'Where do the children play?' by Cat Stevens are further examples of lyrics that expressed concern for the detrimental effects on the environment by development. This message was echoed by many other artists during the 1960s and 1970s, especially by folk singers who embedded important social messages in their lyrics.

SOURCE 1 On 22 April 1970, the world celebrated its first Earth Day. In the United States, 20 million people, many of them students, turned out for a day of peaceful demonstrations to show policy-makers that the people wanted them to legislate to protect the environment.



on Resources

[Weblink](#) 'Mercy mercy me' lyrics

Magazines

Magazines also played an important role in disseminating information about environmental issues. *Wildlife Australia* (launched in June 1963) featured thought-provoking pieces on environmental topics. In December 1970, *National Geographic* magazine included a special report titled ‘Our ecological crisis’, made up of three feature stories that captured the mood of the time: ‘Pollution, threat to man’s only home’; ‘The world — and how we abuse it’ and ‘The fragile beauty all about us’.

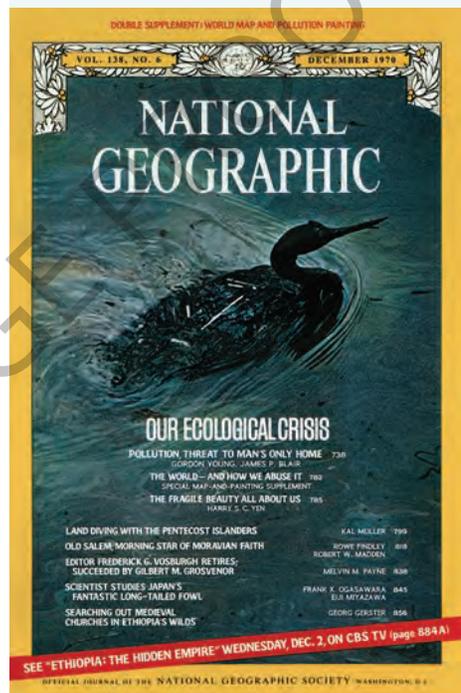
Books

While the protest movements of the 1960s and 1970s acted as a foundation for the contemporary environment movement, the written word was very influential in bringing major environmental problems to the attention of the broader public. In *Silent Spring* (1962), American marine biologist and nature writer Rachel Carson’s warnings of the damage that human beings were doing to nature led to a nationwide ban on DDT and other harmful pesticides. *The Population Bomb* (1968) by Paul and Anne Ehrlich took a controversial and extreme position on population control, suggesting that, if population growth went unchecked, the world would face famine on a never-before-seen scale in the 1970s and 1980s. In 1973, respected English economist E. F. Schumacher challenged the industrial-age notion that ‘bigger is better’ in his collection of essays *Small is Beautiful: A Study of Economics as if People Mattered*.

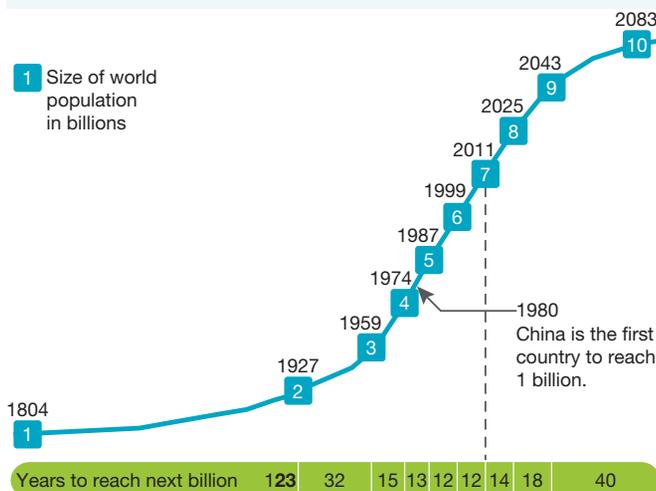
The ideas that underpinned the new environment movement included:

- unlimited growth is unsustainable
- biological systems need to remain diverse and productive
- the natural world has inherent rights
- the Earth and its creatures are all part of the same living being.

SOURCE 2 The December 1970 issue of *National Geographic* put the issue of the environment on the agenda with its special report.



SOURCE 3 Seven billion and beyond: the growth of the world population and future predictions



Source: The United Nations Population Division, United States Census Bureau

SOURCE 4 Rachel Carson's book *Silent Spring* had a tremendous impact worldwide, raising consciousness in the public about the balance that must be maintained between humans and the environment if both are to remain healthy. She begins the book by describing a fictional town in the US and the fate that befalls it as a result of irresponsible farming practices. (From *Silent Spring*, 1962, Houghton Mifflin, Boston, p. 21)

There was once a town in the heart of America where all life seemed to live in harmony with its surroundings. The town lay in the midst of a checkerboard of prosperous farms, with fields of grain and hillsides of orchards where, in spring, white clouds of bloom drifted above the green fields. In autumn, oak and maple and birch set up a blaze of colour that flamed and flickered across a backdrop of pines. The foxes barked in the hills and deer silently crossed the fields, half hidden in the mists of the autumn mornings . . . Even in winter the roadsides were places of beauty, where countless birds came to feed on the berries and on the seed heads of the dried weeds rising above the snow . . .

Then a strange blight crept over the area and everything began to change. Some evil spell had settled on the community: mysterious maladies swept the flocks of chickens; the cattle and sheep sickened and died. Everywhere was a shadow of death. The farmers spoke of much illness among their families. In the town the doctors had become more and more puzzled by new kinds of sickness appearing among their patients. There had been several sudden and unexplained deaths, not only among adults but even among children, who would be stricken suddenly while at play and die within a few hours.

Resources

 **Interactivity** The environment in popular culture (int-6716)

New ideas

One idea to come out of the growing environment movement was the concept that the Earth and its **biosphere** are all part of the same **organism**. This was known as the **Gaia hypothesis**, a theory originally formulated in the 1970s by chemist James Lovelock and microbiologist Lynn Margulis. In Australia, the theory's proponents include the Gaia Foundation (founded in Perth in 1987). The foundation's members attempt to adhere to three basic commitments:

- personal growth; healing and empowering the self to fulfil personal, community and planetary potential
- community building through development and education
- service to the Earth to enhance the wellbeing and flourishing of all life.

Another concept to come out of this era was that nature has inherent rights. Rights of Nature is 'a worldwide movement creating human communities that respect and defend the rights of nature'. According to this school of thought, nature should be thought of as more than 'property' to be exploited by those who own it.

SOURCE 5 An official statement from the Global Alliance for the Rights of Nature

Rights of Nature is the recognition and honoring that Nature has rights. It is the recognition that our ecosystems — including trees, oceans, animals, mountains — have rights just as human beings have rights. Rights of Nature is about balancing what is good for human beings against what is good for other species, what is good for the planet as a world. It is the holistic recognition that all life, all ecosystems on our planet are deeply intertwined.

Rather than treating nature as property under the law, rights of nature acknowledges that nature in all its life forms has the right to exist, persist, maintain and regenerate its vital cycles.

And we — the people — have the legal authority and responsibility to enforce these rights on behalf of ecosystems. The ecosystem itself can be named as the defendant.

6.5.3 The environment movement in Australia

The Australian environmental movement has an extensive history. While many European settlers were at a loss to understand their new environment upon arrival in Australia, others immediately began to study and learn about the unique flora and fauna of this country. Botanists and naturalists such as Joseph Banks came to Australia on the First Fleet and began cataloguing the species they encountered. However, it was not until the late nineteenth century that organised environmental societies, such as the Field Naturalist Club of Victoria (1880), began to arise. Later, as railways expanded across the country, and the Depression made car travel expensive, bushwalking societies, such as the Sydney Bushwalkers Club and the Mountain Trails Club, gained popularity. Around this time, conservation societies also became popular, accompanying the public outcry against the culling of native species, particularly koalas. In the mid twentieth century, when World War II dominated the political and social landscape, the environment movement was relatively inactive, but it re-emerged in the 1960s as the notion of conservation experienced growing support at home and around the world.

Australian Greens lead the world

The world's first Green parties were founded from 1972 onwards, and included New Zealand's Values Party (1972), Europe's Popular Movement for the Environment (1972) and Britain's PEOPLE (1973), all of which would go on to have a lasting impact on their local political scene in the decades to come.

However, the first environment party to contest an election was the United Tasmania Group (UTG), which formed during the failed 1972 campaign to save Lake Pedder. During the 1970s and 1980s, environmental political parties emerged in every state and territory of Australia, while, in 1989, three Green Party members were elected to state parliament in Tasmania, where they held the balance of power, meaning that the presiding ALP government had to gain the support of the Greens before passing laws. In 1992, state parties joined to form a national Greens party. The rise of the Australian Greens was at the forefront of the corresponding rise of Green parties around the world.

SOURCE 6 The charter of the United Tasmania Group, known as the New Ethic, would go on to influence many international Green documents of the following decades, including the Global Greens Charter of 2001. Its principles relate not only to the environment, but to social justice as well, as can be seen in this excerpt.

And we shall:

- Create new institutions so that all who wish may participate in making laws and decisions at all levels concerning the social, cultural, political, and economic life of the community;
- Provide institutions for the peaceful and unimpeded evolution of the community and for the maintenance of justice and equal opportunity for all people;
- Change our society and our culture to prevent a tyranny of rationality, at the expense of values, by which we may lose the unique adaptability of our species for meeting cultural and environmental change;
- Prevent alienation of people in their social and work roles and functions while making scientific, technical and vocational knowledge and practice free and open to all;
- Create a new community in which men and women shall be valued for their personal skills, for the material and non-material worth of these skills to groups and the whole community, for their service to the community, and for their noncompetitive achievement in all aspects of life;
- Live as equal members of our society to maintain a community governed by rational non-sectional law;
- Preserve specific areas of private and group life where private thought, speech and action is of group importance and does not interfere unreasonably, with others;
- And vest our individual and communal rights in a parliament of representatives chosen by all to enforce our law for as long as that power is not used unfairly to advantage or disadvantage any individual or group in the community.

The core values of Green parties

A Green party is one that has adopted a set of six principles outlined in the Global Greens Charter, which was signed by 800 delegates from the Green parties of 72 countries in Canberra in 2001. These principles were based upon those outlined in the policies of Green parties from Australia, Europe, Britain, Mexico, Brazil, Canada, Taiwan and elsewhere. The principles are:

- ecological wisdom
- social justice
- participatory democracy
- non-violence
- sustainability
- respect for diversity.

SOURCE 7 From the Preamble of the Global Greens Charter, as adopted in Canberra in 2001 and updated in Dakar in 2012.

We, as citizens of the planet and members of the Global Greens . . .

Assert the need for fundamental changes in people's attitudes, values, and ways of producing and living

Declare that the new millennium provides a defining point to begin that transformation

Resolve to promote a comprehensive concept of sustainability which:

- protects and restores the integrity of the Earth's ecosystems, with special concern for biodiversity and the natural processes that sustain life
- acknowledges the interrelatedness of all ecological, social and economic processes
- balances individual interests with the common good
- harmonises freedom with responsibility
- welcomes diversity within unity
- reconciles short term objectives with long term goals
- ensures that future generations have the same right as the present generation to natural and cultural benefits.

Affirm our responsibility to one another, to the greater community of life, and to future generations

Commit ourselves as Green parties and political movements from around the world to implement these interrelated principles and to create a global partnership in support of their fulfilment.

on Resources

 **Weblink** The Australian Greens

6.5 ACTIVITIES

1. Rachel Carson is considered by some historians and commentators to be one of the most significant individual voices in the contemporary environmental movement. Use the library or internet to research her life and work and write a 300-word response assessing whether this claim is justified.

Determining historical significance

2. Research subsequent Earth Days in 1990 and 2000 and create a graph to show the growth of participation since the first Earth Day. (The next global Earth Day will take place in 2050.)

Identifying continuity and change

6.5 EXERCISES

Historical skills key: **HS1** Remembering and understanding **HS2** Sequencing chronology **HS3** Using historical sources as evidence **HS4** Identifying continuity and change **HS5** Analysing cause and effect **HS6** Determining historical significance

6.5 Exercise 1: Check your understanding

1. **HS1** List some of the world issues that were the subject of protest movements in the 1960s and 1970s.
2. **HS1** Why did people in countries such as the United States and Australia protest against the Vietnam War?

3. **HS1** What forms of popular culture helped to bring the issue of the environment to public awareness?
4. **HS1** What prediction did Paul and Anne Ehrlich make in their book *The Population Bomb*? How accurate was it?
5. **HS1** What four key ideas underpinned the new environment movement?
6. **HS1** Explain the Gaia hypothesis in your own words.
7. **HS1** List three examples of early environmental activity in Australia.
8. **HS1** Explain why the Australian environment movement was relatively inactive in the mid twentieth century.
9. **HS1** What environmental issue led to the United Tasmania Group being the first 'Green' political party to contest an election?

6.5 Exercise 2: Apply your understanding

1. **HS3** What does **SOURCE 1** tell you about popular support for the environment in 1970?
 2. **HS3** Using **SOURCE 3**, answer the following questions.
 - (a) When did the world population reach one billion?
 - (b) When Ehrlich wrote *The Population Bomb* in 1968, what was the approximate world population?
 - (c) The figures for 2025, 2043 and 2083 are predictions. What ongoing information could have been used to make these predictions?
 3. **HS3** Study **SOURCE 2**. Explain how the image used relates to the environment.
 4. **HS3** Refer to **SOURCE 4**.
 - (a) What are some of the examples of beauty that once existed in Rachel Carson's fictional town?
 - (b) How did the 'evil spell' manifest itself in the town?
 - (c) How valid or effective is her description in drawing attention to environmental changes?
 5. **HS3** What analogy is used to explain Rights of Nature in **SOURCE 5**?
 6. **HS3** Compare **SOURCES 6** and **7**.
 - (a) Are they primary or secondary sources?
 - (b) In what respects are they (i) similar and (ii) different?
 - (c) Which source do you consider expresses its message most clearly? Explain your opinion.
 7. **HS3** Choose two sources from this subtopic and write a paragraph discussing the reliability of each as a historical document. Consider the perspective from which each source originated and any bias that might affect its reliability.
 8. **HS4** Explain how concern for the environment has changed in Australia from early European settlement until the present time. Use as many examples as possible from both time periods in your response.
 9. **HS5** Explain how popular culture was able to influence and promote the development of the environmental movement.
- Try these questions in learnON for instant, corrective feedback. Go to www.jacplus.com.au.

6.6 Defending the environment

6.6.1 Environmental activism

Borrowing tactics from the successful civil rights and anti-war movements, throughout the 1960s and 1970s environmental activists took to the streets to protest a range of issues. They would become increasingly sophisticated as they took on some of the world's largest and most powerful companies. The protests raised conservation awareness within the broader community in a way that conferences and official environmental education campaigns rarely had.

Greenpeace

The organisation that would become linked with the environment movement began in 1971 as a concerned citizens' group in Vancouver, Canada. They had come together to protest American nuclear testing off the coast of Alaska. This organisation began without an official **manifesto** or unified purpose. Instead, because they represented both the ecological and peace movements, the group members chose a name that combined the two aims: Greenpeace. Although their boat was stopped before it reached the test site, Greenpeace quickly became well known and would go on to become one of the world's leading environmental organisations, launching protests against many issues, including pollution, deforestation and nuclear testings, and establishing offices around the world.

SOURCE 1 As they approached Amchitka in 1971, crew member Ben Metcalf called CBC Radio. His statement would serve as a basis for the organisation that would later become known as Greenpeace.

We call our ship the *Greenpeace* because that's the best name we can think of to join the two great issues of our times, the survival of our environment and the peace of the world. Our goal is a simple, clear, and direct one — to bring about a confrontation between the people of death and the people of life. We do not consider ourselves to be **radicals**. We are conservatives, who insist upon conserving the environment for our children and future generations. If there are radicals in this story, they are the fanatical **technocrats** who believe they have the power to play with this world like an infinitely fascinating toy.

The message of the *Greenpeace* is this: The world is our place. And we insist on our basic human right to occupy it without danger from any power group. This is . . . a sense and idea that we share with every ordinary citizen of the world.

DID YOU KNOW?

Today Greenpeace has over 2.8 million members worldwide. The organisation is funded largely through contributions from members. It conducts its campaigns using volunteers.

Ecological interdependence

In 1976, Greenpeace signed a Declaration of Interdependence, stating, 'With nuclear reactors proliferating [growing rapidly] and over 900 species on the endangered list, there can be no further delay or our children will be denied their future . . .' The declaration stated the organisation's position on 'ecological interdependence' (being dependent on each other), the relationship between the Earth and its inhabitants, a concept of growing interest to many members of the broader public at the time. Greenpeace has succeeded in its aim to 'merge ecology, peace, post-industrialism and media strategy into a vision of cultural transformation'.

SOURCE 2 This excerpt from Greenpeace's Declaration of Interdependence (1976) outlines the organisation's three laws of ecology.

First Law of Ecology: All forms of life are interdependent. The prey is as dependent on the predator for the control of its population as the predator is on the prey for a supply of food.

Second Law of Ecology: The stability (unity, security, harmony, togetherness) of ecosystems is dependent on diversity (complexity). An ecosystem that contains 100 different species is more stable than an ecosystem that has only three species. Thus, the complex tropical rainforest is more stable than the fragile Arctic tundra.

Third Law of Ecology: All resources (food, water, air, minerals, energy) are finite and there are limits to the growth of all living systems. These limits are finally dictated by the finite size of the Earth and the finite input of energy from the sun.

Since its establishment, Greenpeace has lived up to its mission as the world's leading environmental activist organisation, involving itself in many campaigns. The most famous symbol of Greenpeace's peaceful protest and environmental activism is the ship *Rainbow Warrior*. The original *Rainbow Warrior* was sunk by French nationals when it was docked in Auckland Harbour in 1985. It was on its way to a nuclear protest in Muroroa. Kumi Naidoo, Greenpeace International's Executive Director, has described the ship as 'an icon of non-violent direct action and a beacon of hope for millions of people around the world'.

The first Australian action under the Greenpeace banner was in 1977, when Australian activists joined with Canadian Greenpeace co-founder Robert Hunter to protest Australia's last whaling station in Albany, Western Australia. More than a year later, after a successful campaign, Australia ended its whaling program.

SOURCE 3 Greenpeace's ship *Rainbow Warrior*. This ship, registered in The Netherlands, is the third to bear the name and was launched in 2011. It was built to environmentally friendly specifications and uses mainly wind power.



on Resources

 **Video eLesson:** The Green movement (eles-2618)

6.6.2 Environmental activism in Australia

Union activism and 'green bans'

Environmental activism took a grass roots, economic form in Australia in the 1970s through the union movement.

Unions have traditionally been a formidable force in Australia. With thousands of paying members, unions had the power to influence political decisions by bringing industry to a halt. In 1971, the New South Wales branch of the Builders' Labourers Federation (BLF) objected to plans to redevelop one of Sydney's historic suburbs, Hunter's Hill, and refused to begin construction. This was the first 'green ban'. By 1974, unions placed bans on more than 40 sites worth an estimated \$3 billion. These bans saved some of Sydney's most historically and environmentally significant areas, including Woollahroo, Glebe and The Rocks, from inappropriate development.

SOURCE 4 With a force of 11 000 union members behind him, New South Wales BLF Secretary Jack Munday (quoted in a later interview below) led the green bans, which challenged the belief, then held by many politicians and real estate developers, that 'all development was good'.

... Before the green bans there was a notion that the environment was the preserve of the better educated, well to do or middle upper classes and mainly about forests, or lakes or about the Barrier Reef or things like nature conservation. But, of course, the point is that we are one of the most urbanised countries on Earth. So the damage that this was doing to the city, this over-development was doing to the city, the progressive segment of the population were right on side with the green ban, and were really instrumental in the green ban.

Environmental campaigns in Tasmania

The fight for Lake Pedder

In 1967 the Tasmanian Labor government, along with the Hydro-Electric Commission, made plans to build three dams on the Gordon River to generate cheap, clean electricity. This would involve flooding Lake Pedder, which had received National Park status in 1955.

Environmental activists objected to the plan, recognising that it would have catastrophic consequences for the lake and its surroundings. They collected 10 000 signatures from around Tasmania for a petition to stop construction of the dams and compiled photographs that highlighted the natural beauty of the lake. As they came to recognise the lake's environmental significance, people from around Australia marched in support of the conservationists.

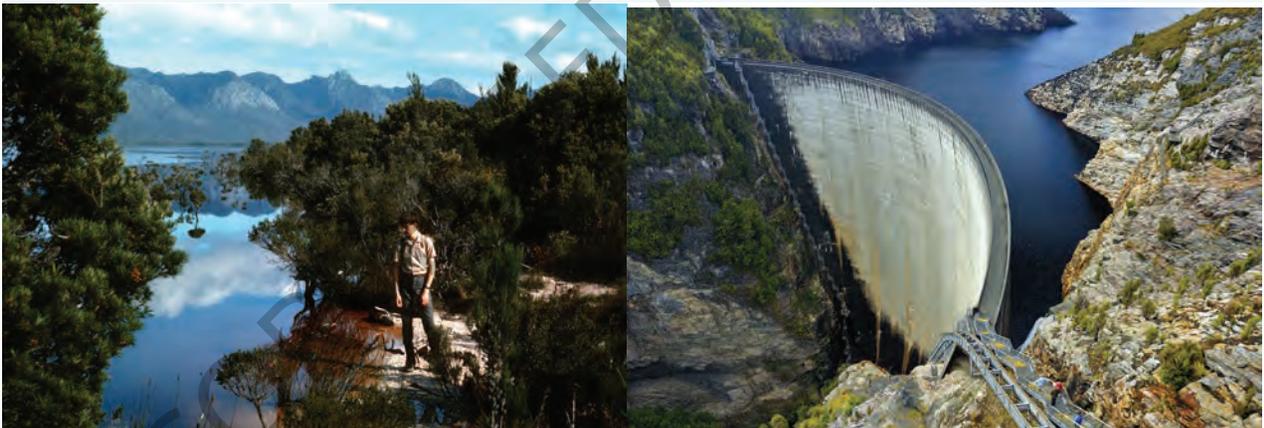
Their efforts were in vain. Lake Pedder was flooded in 1972. The loss to Australia's environmental and cultural heritage was summed up by environment movement analyst Dr Peter Hay, who said, 'Had it still existed, it would have the same sort of status in Australian mythology as other landscape icons like Uluru and Kakadu and the Great Barrier Reef.'

The country may have lost one of its greatest natural assets, but it had gained something very powerful. The campaign to save Lake Pedder had been spearheaded by the United Tasmania Group, the world's first Green party.

DID YOU KNOW?

A Lake Pedder Restoration Committee is campaigning to have Lake Pedder drained and restored. Doing so would cost in excess of \$100 million. Divers have established that its original features such as pink sand dunes remain intact.

SOURCE 5 These two images show (a) Lake Pedder's pristine values in 1968 before its inundation in 1972 and (b) the Gordon Dam which was constructed after the inundation of Lake Pedder.



on Resources

 **Video eLesson:** Lake Pedder's future (eles-2619)

The fight for the Franklin River

Another major challenge came for Australian environmentalists in 1983, when the federal government nominated Western Tasmania Wilderness National Parks for inclusion on the World Heritage List. However, before this could be finalised the Tasmanian government passed the *Gordon River Hydro-Electric Power Development Act 1982*. This meant that a dam would be constructed on the Franklin River — the state's last 'wild river' — within this heritage area.

In 1983, thousands of protesters from around Australia took part in the Wilderness Society's blockade of the construction site, designed to protect the Franklin River and the wilderness environment of south-west Tasmania. As the campaign gained momentum through public awareness activities, such as slide nights, information stalls and media interviews, more and more concerned Australians added their voices to the protest. The federal government moved to prevent the project by passing the *World Heritage Properties Conservation Act 1983*. The issue ended up in the High Court, with the Tasmanian government arguing that the matter was outside the powers of the Commonwealth. The High Court did not agree. It decided that the international treaty the federal government had signed in 1974 gave it the right to protect this pristine wilderness area for future generations. The dam was not built. Franklin River was saved. In 1990, Bob Brown won the prestigious Goldman Award for his work in leading the campaign to save the Franklin River. He would go on to lead the Australian Greens from 1992.

Significance of the Franklin campaign

The campaign to save Lake Pedder was a failure, but the campaign to prevent the damming of the Franklin was successful. In the 11 years between those two events, significant progress had been made in environmental activism in Australia. Using direct action and other highly organised methods, including enlisting the media, activists and their supporters had created a new public awareness of the environment movement and its aims. A new value on the worth of wilderness emerged, as well as the establishment of an ecotourism industry for Tasmania. The Franklin campaign also showed that federal governments, through use of international treaties, could override state governments.

SOURCE 6 Peter Dombrovskis was born in Germany in 1945 to Latvian parents and migrated to Australia in 1950. Dombrovskis took this photograph of the Franklin River in 1979. Entitled *Morning Mist, Rock Island Bend*, the photograph became instrumental in the successful campaign to save the Franklin River. The Wilderness Society ran a series of full-colour advertisements (extremely rare at this time) in *The Sydney Morning Herald* and *The Age* newspapers featuring the photograph. Underneath the image were the words, 'Could you vote for a party that would destroy this?'



SOURCE 7 Protesters blocking an access road to the Franklin dam site in December 1982



on Resources

 **Video eLesson** Franklin River campaign (eles-2620)

DISCUSS

At times, some environmental protesters employ controversial tactics to achieve their goals. Do you believe these tactics are justified? What effect can such tactics have on environmental issues? **[Ethical capability]**

6.6 ACTIVITY

A stated aim of Greenpeace was to 'merge ecology, peace, post-industrialism and media strategy into a vision of cultural transformation'. Research one early and one recent Greenpeace mission and evaluate the success of each in relation to this aim. **Identifying continuity and change**

6.6 EXERCISES

Historical skills key: **HS1** Remembering and understanding **HS2** Sequencing chronology **HS3** Using historical sources as evidence **HS4** Identifying continuity and change **HS5** Analysing cause and effect **HS6** Determining historical significance

6.6 Exercise 1: Check your understanding

- HS1** Explain in your own words how the organisation Greenpeace came to be named.
- HS1** Fill in the blanks in the paragraph below.
Greenpeace signed a Declaration of _____ in _____, _____ years after the organisation was formed. The Declaration was based on _____: the concept that the _____ and its inhabitants were _____ on each other.
- HS1** Explain the concept of a 'green ban'. Name some areas of Sydney saved from inappropriate development by these bans.
- HS1** Why was a proposal put forward to dam the Gordon River (and flood Lake Pedder)?
- HS2** Create a timeline of all the dates and events mentioned in the text under the main heading *Environmental campaigns in Tasmania*.

6.6 Exercise 2: Apply your understanding

1. **HS3** Refer to **SOURCE 1**.
 - (a) Greenpeace crew member Ben Metcalf clearly describes two groups of people who are in confrontation. Identify the two groups.
 - (b) Explain the two groups' perspectives (according to Greenpeace).
 - (c) According to **SOURCE 1**, in 1971 what was Greenpeace's essential message?
2. **HS3** Read **SOURCE 2**.
 - (a) According to the source, why is a complex tropical rainforest ecosystem more stable than the fragile Arctic tundra ecosystem?
 - (b) Explore the ecological relationship stated in 'First Law of Ecology' (**SOURCE 2**). According to Greenpeace, how can prey and predators be dependent on each other?
3. **HS3** Consider **SOURCES 1** and **2**. Which source best explains Greenpeace's perspective? Justify your choice.
4. **HS3** In **SOURCE 4**, Builders' Labourers Federation (BLF) Secretary Jack Munday brought social class issues into his speech. Why would Munday have done this?
5. **HS3** Study **SOURCES 5a** and **5b**. What aspects of the natural environment evident in **SOURCE 5a** appear altered in **SOURCE 5b**?
6. **HS3** Examine **SOURCE 6**.
 - (a) How did the image shown in **SOURCE 6** become so important in the success of the Franklin River campaign?
 - (b) Describe the imagery used in the photograph and explain what effect it might have had on the public.
7. **HS3** What does **SOURCE 7** tell you about the methods employed by the activists depicted? What impressions can you gain about those shown protesting in this photograph?
8. **HS3** Examine **SOURCES 1** and **2** and the information in this subtopic.
 - (a) Summarise the views of Greenpeace as described by Ben Metcalf in his manifesto of 1971.
 - (b) In what ways were these views similar to, and different from, those expressed in the Declaration of Interdependence of 1976?
 - (c) From the evidence presented in section 6.6.2, how well do the concerns raised by Lake Pedder protesters match the views held by Greenpeace as presented in section 6.6.1?
9. **HS3** Compare the visual sources used in this subtopic. Explain the techniques used by photographers to carry their intended messages.
10. **HS4** Answer the following questions to compare the Lake Pedder and Franklin Dam protests.
 - (a) List the similarities and differences between the two events.
 - (b) How did the Franklin Dam protesters learn from their counterparts at Lake Pedder? What evidence of this continuity exists in environmental campaigns that you are aware of today?
11. **HS5** Why was the outcome so different in the cases of Lake Pedder and the Franklin River?
12. **HS5** At times, some environmental protesters employ controversial tactics to achieve their goals. Do you believe these tactics are justified? What effect can such tactics have on environmental issues?
13. **HS6** What do you consider to be the historical significance of the success of the campaign to prevent the damming of the Franklin River?

Try these questions in learnON for instant, corrective feedback. Go to www.jacplus.com.au.

6.7 The Atomic Age

6.7.1 Fears of nuclear war

With the explosion of the first atomic bomb in 1945, the world entered a new era that would become known as the Atomic Age. The United States' sole possession of nuclear weapons seemed to guarantee the world's security, while atomic energy promised to become the clean, cheap power source of the future. After the Soviet Union tested its first nuclear weapon in 1949, however, the two superpowers entered a nuclear 'arms race', in which each tried to develop the largest nuclear stockpile. Many people worried that a nuclear war could break out. Around the same time, environmentalists raised concerns about the safety of nuclear power plants and the toxic waste this supposedly 'clean' power source generated.

The **Cold War** that dominated international superpower politics after World War II resulted in, at best, an uneasy truce. This truce was sustained by a concept known as Mutually Assured Destruction (MAD).

This was the notion that in the event that nuclear warfare between the two countries did eventuate, both sides would be completely annihilated. Having seen the calamitous impacts nuclear warfare had on Japan's people and environment at the close of World War II, people across the world lived in serious fear of full-scale nuclear war.

SOURCE 1 An excerpt from US Secretary of State, Robert McNamara's 'No cities' speech delivered in Ann Arbour on 9 July 1962. The controversial speech outlined the government's nuclear war policies and strategies.

Let us look at the situation today. First, given the current balance of nuclear power, which we confidently expect to maintain in the years ahead, a surprise nuclear attack is simply not a rational act for any enemy. Nor would it be rational for an enemy to take the initiative in the use of nuclear weapons as an outgrowth of a limited engagement in Europe or elsewhere. I think we are entitled to conclude that either of these actions has been made highly unlikely.

Second, and equally important, the mere fact that no nation could rationally take steps leading to a nuclear war does not guarantee that a nuclear war cannot take place. Not only do nations sometimes act in ways that are hard to explain on a rational basis, but even when acting in a 'rational' way they sometimes, indeed disturbingly often, act on the basis of misunderstandings of the true facts of a situation. They misjudge the way others will react, and the way others will interpret what they are doing. We must hope, indeed I think we have good reason to hope, that all sides will understand this danger, and will refrain from steps that even raise the possibility of such a mutually disastrous misunderstanding. We have taken unilateral steps to reduce the likelihood of such an occurrence. We look forward to the prospect that through arms control, the actual use of these terrible weapons may be completely avoided. It is a problem not just for us in the West, but for all nations that are involved in this struggle we call the Cold War.

6.7.2 Nuclear power and the Chernobyl disaster

Nuclear war was not the only means by which the Earth's environment and people's lives could be devastated. The Chernobyl Power Complex was a nuclear power plant located in the Ukrainian SSR (now the Ukraine), on the border of Belarus and the USSR.

The plant consisted of four reactors, which were completed between 1970 and 1983. On 26 April 1986, Reactor 4 exploded, discharging approximately 5 per cent of its nuclear reactor core into the atmosphere and downwind. The disaster would lead to the death of hundreds of people, the ongoing illness of thousands and widespread contamination. No event symbolised the potential danger of nuclear power, or was more important to anti-uranium campaigners, than the Chernobyl disaster.

SOURCE 2 A cartoon drawn by famed American political commentator, Herbert Block (aka Herblock). The cartoon was published immediately after the Cuban Missile Crisis between the US and USSR ended in October 1962.



DID YOU KNOW?

Calder Hall, the world's first commercial nuclear electric power plant, was opened at Sellafield in England in 1952. Although it was seen by many as the beginning of an exciting new 'atomic age', the plant supplied more than cheap electricity. It produced plutonium to feed Britain's nuclear weapons program.

6.7.3 Nuclear testing on Australian soil

Although environmental campaigners and anti-nuclear protesters were convinced of the threats that nuclear power and energy presented for the planet, others had more positive views on its potential for peaceful purposes. At the International Conference on Atomic Energy convened by the United Nations in Geneva in 1955, 25 000 participants came together to advance non-military uses of nuclear technology. President Eisenhower had delivered his 'Atoms for Peace' speech two years earlier and many leaders and their governments wanted to support the cause. In 1954, the United Kingdom established the United Kingdom Atomic Energy Authority (UKAEA), although it had already been carrying out nuclear testing, notably on Australian soil.

From 1952 to 1957, the United Kingdom conducted a series of 12 nuclear tests at Emu Junction, Monte Bello Islands and Maralinga. Although these tests had been approved by Australia's Commonwealth government, it is likely this was done without consideration of the true environmental impacts of the testing program. In fact, some sources from the time (such as newspaper headlines and articles) document the pride that Australians felt about our participation in the British nuclear testing program.

The testing sites were chosen primarily for their remote locations. The Monte Bello Islands, for example, are an isolated chain of small islands off the coast of far north Western Australia. The British Navy could easily access the site and could conduct their testing away from prying international eyes. The desert locations of Maralinga (see **SOURCE 6**) and Emu Junction were chosen for similar reasons.

An Australian royal commission in 1985 revealed that, as they tried to develop their nuclear weapons, the British had unwittingly exposed Australian and English troops, as well as Indigenous communities, to nuclear **fallout**. Scientists testified that they had found high levels of nuclear contamination at Maralinga but acknowledged that the human cost of the tests would be impossible to prove. This was partly because, at the time of the tests, few records were kept of the Indigenous people living on the land, and partly because of Indigenous taboos involving naming the dead. In 1985, the South Australian government returned ownership of the land to its traditional owners under the Maralinga Tjarutja Land Rights Act; however, it would take another ten years to clean up the contamination.

on Resources

 **Video eLesson** Nuclear tests at Maralinga (eles-2621)

SOURCE 5 Two years before the more well-known nuclear tests at Maralinga, a bomb was detonated at Emu Junction, South Australia. Many of the local Indigenous people were not warned of the impending blast.

EILEEN KAMPAKUTA BROWN (translated): We noticed a very red, red colour in the sky in the west there, and we thought, hey. And it was that boom, that blast, and then that mushroom that we could see. That next morning when we all woke up, that was when we noticed sickness happening then.

Yami got up that morning and we saw, you know, red eyes, sore red eyes, real phlegmy in the nose, coughs, bad coughs as well, and so we were starting to think maybe it was to do with that bomb.

That morning when we woke up was when we found out about Kelly's father who passed away. Day Two we lost Kelly's sister then. So Day Three was when we lost Kelly's mother.

SOURCE 6 A sign declaring a prohibited area on the road to the Maralinga test site, taken in 1974



Protests at Jabiluka

In 1996, with the cleanup of Maralinga finished and the traditional owners returning to their land, a new controversy was brewing over Jabiluka, a proposed **uranium** mine in the middle of the Northern Territory's Kakadu National Park. On 8 October 1997, the Australian government had approved the Jabiluka uranium mining project. Following a plea by representatives of the Mirarr people, who believed that mining at the site would destroy their land and culture, activists from around Australia **blockaded** Jabiluka. In addition to the concerns raised by the Mirarr people about the immediate danger that the mine posed to their community, many environmentalists feared the long-term cost of mining uranium for power generation: nuclear waste.

Challenging the mine owners and the government, protesters blocked access to the proposed mining site. Around 500 protesters were arrested, but the blockade succeeded in promoting the claims of the Mirarr people and raising awareness of the human and environmental cost of uranium mining within the broader Australian community.

SOURCE 7 This press release by the Greens Party outlines why party leader Bob Brown viewed Jabiluka as one of the major issues of 1998.

Media Release/Spokesperson Bob Brown

Monday, 1 June 1998, 12:00 am

Greens Senator Bob Brown arrives in Darwin today to travel to the Jabiluka protest blockade.

On Tuesday morning Senator Brown will breakfast at the blockade with grandmother and anti-Jabiluka uranium mine protester Ethel Reynolds. Ethel, 85, from Melbourne, has travelled to Kakadu to be part of the blockade.

Ethel is staying at the blockade camp with her granddaughter.

'I am going to show total support for the Mirrar people and to the blockaders,' said Senator Brown.

'The combined issues of the Mirrar people's right to determine the future of their country and the issue of Australia exporting uranium to be part of the nuclear fuel cycle, make this the pre-eminent environmental issue for 1998.

'It will be a major issue in the upcoming federal election,' said Senator Brown.

In 1998, the United Nations World Heritage Committee assessed the plans to mine uranium within Kakadu National Park (particularly at Jabiluka) and expressed 'grave concern' at the potential dangers to the National Park if the plans were to go ahead. This assertion was confirmed by the Australian Senate committee set up to investigate the potential impact of mining. Despite these criticisms, the Australian government did not order Energy Resources of Australia Ltd (ERA) to stop its plans to mine at Jabiluka.

It would take almost ten years before the protesters and the Mirarr people would get the outcome they had fought for. On 25 February 2005, Rio Tinto, which now owned the mining site, signed the Jabiluka Long-term Care and Maintenance Agreement, in which they agreed to secure the permission of the Mirarr people before beginning any future mining at Jabiluka.

DISCUSS

'The potential benefits of the use of nuclear power far outweigh all social and environmental impacts.' Do you agree or disagree with this statement? Justify your view.

[Ethical Capability]

1. Research the French government's nuclear testing on Mururoa Atoll in the 1980s. Find out about the mission of the *Rainbow Warrior*, Greenpeace's flagship protest boat and the death of a crew member in 1985. Establish the cause of his death and the effects that this tragedy had. **Analysing cause and effect**
2. Research the Fukushima nuclear disaster in 2011 and compare and contrast the impacts of this disaster with those of Chernobyl. Based on the long-term impacts on the environment and the population around Chernobyl, what is the future likely to hold for Fukushima? **Identifying continuity and change**

6.7 EXERCISES

Historical skills key: **HS1** Remembering and understanding **HS2** Sequencing chronology **HS3** Using historical sources as evidence **HS4** Identifying continuity and change **HS5** Analysing cause and effect **HS6** Determining historical significance

6.7 Exercise 1: Check your understanding

1. **HS1** Why was the Atomic Age so called?
2. **HS1** Using your own words, explain the concept of Mutually Assured Destruction (MAD).
3. **HS1** In what ways would a nuclear war be calamitous for the environment?
4. **HS1** Explain the response of the following people in the Chernobyl disaster:
 - locals
 - liquidators
 - government officials
 - local media.
5. **HS1** Why might the USSR government have been reluctant to admit that the Chernobyl disaster had taken place?
6. **HS1** Why was the Chernobyl disaster such a rallying symbol for anti-nuclear protesters?
7. **HS1** Why did some people feel nuclear technology could be a positive force?
8. **HS1** Answer the following questions about nuclear testing in Australia.
 - (a) List the sites in Australia where the United Kingdom carried out nuclear testing.
 - (b) How were they able to conduct these tests in Australia?
 - (c) What was significant about the location of these sites?
 - (d) Had environmental impact studies been conducted?
9. **HS1** The Jabiluka mine would potentially have been extremely profitable to the Mirarr people. If this is true, why would they have been so opposed to the mine's development?
10. **HS1** What were the results of the successful protests against the Jabiluka mine?

6.7 Exercise 2: Apply your understanding

- HS3** Examine **SOURCE 1**.
 - Who is 'we' and who is 'I' in **SOURCE 1**?
 - What two related points about the prospects of a nuclear war does the US Secretary of State make in this extract from his speech? Are these points in harmony or at odds? Explain.
 - According to Robert McNamara, what might lead to an outbreak of nuclear war?
- HS3** Examine **SOURCES 1** and **2**.
 - Which source was chronologically first to be created?
 - Which two countries are represented by their leaders shown in **SOURCE 2**?
 - How does the message of **SOURCE 2** support Robert McNamara's message in **SOURCE 1**?
 - In **SOURCE 2**, the cartoonist uses an analogy of the Greek myth of Pandora, who opened a box that contained all the evils of the world. How apt is this analogy with relation to the threat of nuclear war to the world?
- HS3** Examine **SOURCE 4**.
 - The source represents an artist's impression of the aftermath at Chernobyl. What limitations might it have as an accurate historical source?
 - What other types of sources could a historian draw on to ensure an accurate account of the disaster could be given? Given the nature of the times, why might access to such sources be restricted or difficult to obtain?
- HS3** Read **SOURCE 5** carefully.
 - According to the source, what was seen and heard on the day of nuclear testing at Emu Junction?
 - Is this an eyewitness account? Explain.
 - How reliable do you consider this account? Why?
- HS3** **SOURCE 6** is a photograph taken in 1974.
 - How many years previously had nuclear testing taken place?
 - What can you deduce about the location of the site from this photograph?
- HS3** According to **SOURCE 7**, why does Bob Brown consider it important to meet with protesters at Jabiluka? In what way might his presence assist in their demonstration?
- HS3** Copy and complete the table below to complete an analysis of the different types of historical sources used in this subtopic.

Type of source	Example	Strengths	Weaknesses
Speech			
Political cartoon			
Artist's re-creation of an event			
Photograph			
Eyewitness accounts			

- HS3** Political cartoons, such as the one shown in **SOURCE 2**, are valuable historical sources. At the time of their creation, why might they be more successful in influencing opinions on an issue as opposed to, for example, a government report or a newspaper editorial?
- HS4** Outline the similarities and differences between the treatment of Indigenous people at Maralinga and Jabiluka. Explain what these similarities and differences might suggest about the Australian government's attitude towards Indigenous peoples from 1950 to the present.
- HS4** Initially, the Australian public was proud of its involvement in the British nuclear testing program. Why do you think these views began to change once the testing began? How do you think the Australian government and the Australian people would react today if the United Kingdom proposed further nuclear testing in Australia?

Try these questions in learnON for instant, corrective feedback. Go to www.jacplus.com.au.

6.8 Global environmental issues: responses

6.8.1 Responding to the global challenge of climate change

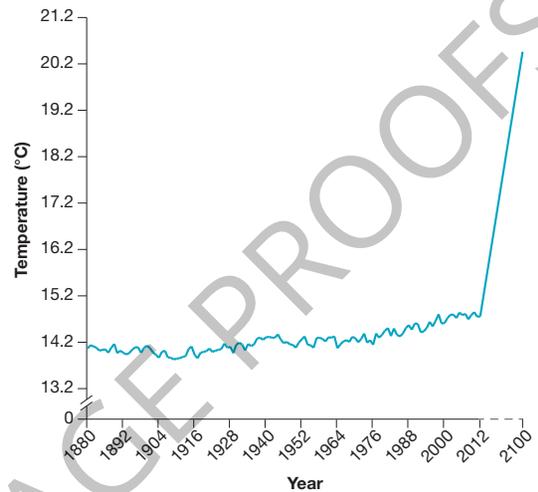
Many global issues today require global responses and international cooperation. Pollution, endangered environments and hazardous waste all demand attention. On one particular issue, however, the environment movement is increasingly vocal. That voice is being added to by scientists, politicians and citizens across the globe.

Despite controversial debates about whether **global warming** and climate change is the result of human activity, science has become settled on the issue, pointing to human activities, particularly our output of carbon dioxide emissions as a very likely cause.

The United Nations World Meteorological Organization announced in January 2016 that, according to its data, 15 of the 16 hottest years on record have all been this century, with 2015 being significantly warmer than the record-level temperatures recorded in 2014. Underlining the long-term trend, 2011–15 is the warmest five-year period on record. Most scientists expect this upward trend to continue.

By the end of the twenty-first century the Earth's average temperature might be up to 5.8°C warmer than today, if greenhouse gas concentration continues to increase. But it is not just the temperature that might change — storms might be more extreme, sea levels might rise, and floods and drought might also become more frequent. Sea levels have risen 10 to 20 centimetres over the past century, affecting many low-lying regions such as Papua New Guinea's Carteret Islands, which are slowly being covered by the sea. They and other low-lying island groups, such as the Marshall Islands and Kiribati in the Pacific, and the Maldives in the Indian Ocean, may eventually be entirely submerged.

SOURCE 1 Average global temperature, 1880–2012, with projection to 2100



SOURCE 2 An aerial view of Christmas Island, Kiribati, in the Pacific Ocean. This low-lying island is threatened by sea level rise caused by global warming.



Already governments are planning for below average rainfall levels to become more commonplace. Around Australia, desalination plants have been built to help meet the future water needs of growing populations. It has also been predicted that the extreme weather that led to the Victorian bushfires on Black Saturday in February 2009 will be exceeded in bushfire seasons to come. While individual governments may plan to deal with the specific issues they face on the home front, it is widely acknowledged that international cooperation is essential for long-term gains to be made in the effort to reverse the effects of global warming.

Kyoto Protocols and climate change conferences

In 1992, the United Nations Framework Convention on Climate Change (UNFCCC), an international environmental treaty, was negotiated at the United Nations Earth Summit held in Rio de Janeiro. Since 1995, parties to the UNFCCC have met annually at the Conference of the Parties (COP) to assess progress in dealing with climate change. Formulated at COP3, held in Kyoto, Japan, the Kyoto Protocols (1997) called for a 15 per cent reduction in carbon dioxide emission by 2012. However, the differing priorities of some countries soon became apparent, with large producers such as China claiming an exemption from any targets because of their growing industrial development. The Australian government was also reluctant to accept these targets, arguing that they would have a negative impact on the Australian economy because of our high dependence on fossil fuels. The Kyoto Protocol was finally ratified (approved) by the Australian government in December 2007 and came into effect in March 2008. In ratifying the agreement, Australia committed to reducing greenhouse gas emissions by 60 per cent of year 2000 levels by 2050.

Ten years later, more than 10 000 participants, including government representatives and non-governmental organisations representing 180 nations, gathered at the Bali Climate Conference to develop the Bali Road Map, a document intended as a guide to reducing carbon emissions beyond 2012. When the United States delegates suggested developing nations should take more responsibility for carbon emissions, frustration with the United States boiled over, with a delegate from Papua New Guinea saying, 'If you cannot lead, leave it to the rest of us. Please get out of the way.' Following the Bali conference, many people hoped for a stronger plan for cutting carbon emissions.

At COP15 held in Copenhagen, Denmark (2009), world leaders officially recognised the need to keep the global temperature rise to less than 2 degrees Celsius. However, the agreement did not contain specific commitments for reaching that goal. At subsequent global climate change meetings, the lack of concrete strategies continued to frustrate politicians and UN representatives. In Paris in 2015, COP21 focused on developing a binding agreement from all nations regarding practical solutions to climate change. The key outcomes of this meeting, the Paris Agreement, are listed in **SOURCE 3**.

SOURCE 3 Agreed outcomes from the 2015 United Nations Climate Change Conference held in Paris

Governments agreed:

- on a long-term goal of keeping the increase in global average temperature to well below 2 °C above pre-industrial levels
- to aim to limit the increase to 1.5 °C, since this would significantly reduce risks and the impacts of climate change
- on the need for global emissions to peak as soon as possible, recognising that this will take longer for developing countries
- to undertake rapid reductions thereafter in accordance with the best available science
- to come together every 5 years to set more ambitious targets as required by science
- to report to each other and the public on how well they are doing to implement their targets
- to track progress towards the long-term goal through a robust transparency and accountability system
- to strengthen societies' ability to deal with the impacts of climate change
- to provide continued and enhanced international support for adaptation to developing countries.

SOURCE 4 'School Strike 4 Climate' supporters protest outside their local Member of Parliament's electoral office in Melbourne, March 2019.



In Katowice, Poland in 2018, COP24 formulated rules for implementation of the 2015 Paris Agreement, which outline how governments will measure and report on their efforts to cut carbon emissions. The Australian government has ratified the Paris Agreement and committed to reducing emissions and increasing renewable energy capacity to meet targets set for 2030 and beyond. The issue remains contentious, however, with many people believing more needs to be done now to protect the planet for the future. In March 2019, thousands of students across Australia went on strike — missing school to protest perceived government inaction on climate change.

DISCUSS

'Global climate conferences such as those held at Kyoto, Copenhagen and Paris have done little to further real action on global change issues.' To what extent do you agree with this statement?

[Critical and Creative Thinking]

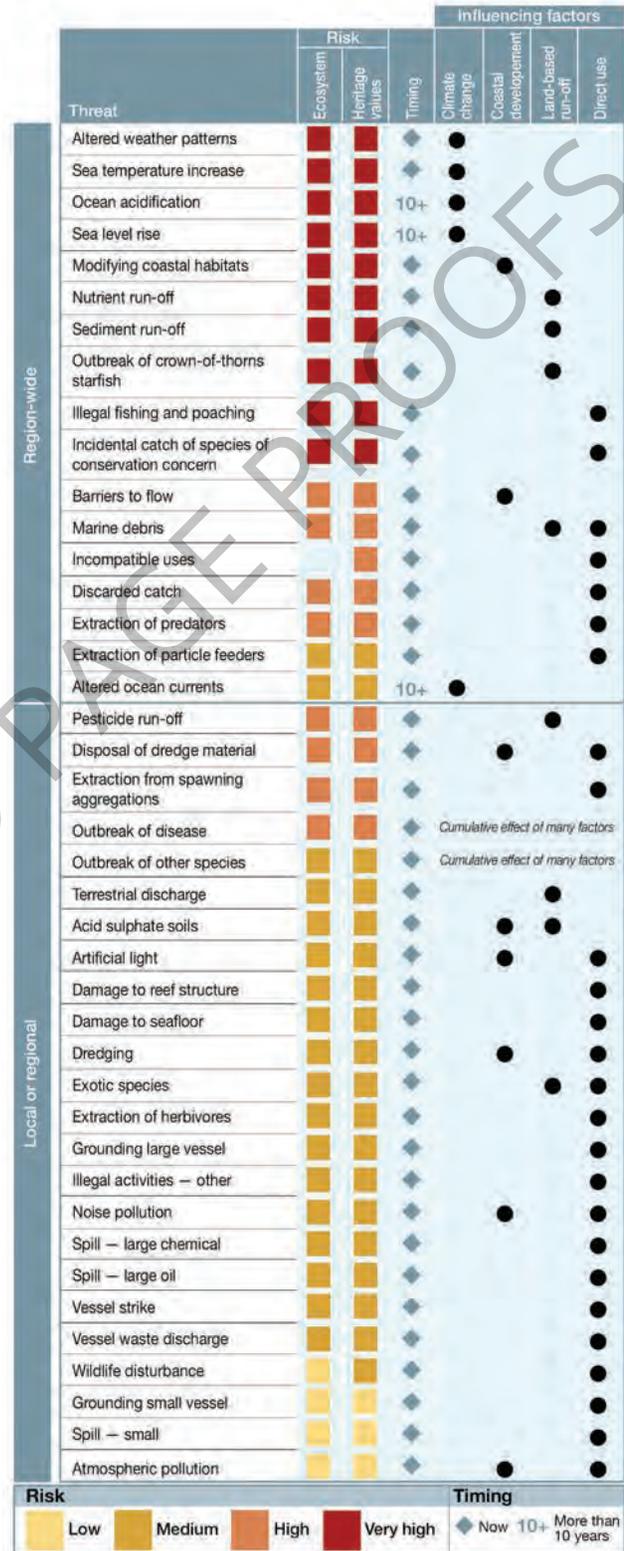
6.8.2 Responses to other environmental issues

Opinion polls in Australia and across the world have confirmed that governments can no longer ignore environmental issues. In the build-up to the 2016 US election, 51 per cent of people listed the environment as a key determining factor in their voting preferences (for a reference point, the most significant listed was terrorism, with 78 per cent). The rise of the Australian Greens as a legitimate alternative party has also forced our country's politicians to carefully consider environmental policies. These changes have resulted in several examples of positive government responses to environmental issues.

In the United States, growing concern regarding the treatment of hazardous material in the 1970s–1980s led to the creation of the *Comprehensive Environmental Response, Compensation, and Liability Act* (1980). Referred to as CERCLA or simply Superfund, the Act gives the government the authority to clean sites that are deemed unsafe. The Act was developed after a long series of tragic environmental disasters in the late 1970s, including the deaths of five workers at a chemical treatment plant in Bridgeport, New Jersey. Today, more than 1300 hazardous sites have been cleaned as a result of this legislation.

Closer to home, the Great Barrier Reef Outlook Report can be seen as another example of a government response to an environmental concern. As one of the most ecologically significant sites in the world, the protection of the Great Barrier Reef is of the utmost importance. Every five years, a detailed assessment into the health of the reef is conducted. This data is then developed into management strategies implemented by the federal and Queensland governments. **SOURCE 5** presents a summary of the risks to the Reef that were identified in the 2014 report.

SOURCE 5 The risks to the Great Barrier Reef of various threats as shown in the 2014 Great Barrier Reef Outlook Report



Deepen and check your understanding of the topic with the following resources and auto-marked questions.

- 6.8 Global environmental issues: responses > **Green politics**

DISCUSS

With a partner, decide whether you agree or disagree with the following statement: 'Australia has a responsibility to cut its carbon emissions, even if other nations are not doing so'.

Justify your opinion using information from this subtopic and other sources you may find.

[Personal and Social Capability]

6.8 ACTIVITIES

1. With a partner, study **SOURCE 5** and answer the following questions.
 - (a) What are (i) the two risk categories and (ii) the four influencing factors for risks measured in **SOURCE 5**?
 - (b) List the threats that are linked to the influencing factor of climate change.
 - (c) Which three threats will come into play in ten years or more?
 - (d) Of the threats that present a very high risk to the ecosystem and heritage values of the Great Barrier Reef, which can (i) Australia's governments, (ii) environment groups and (iii) individual citizens do most about?
 - (e) What responses can government and non-government organisations implement to help address the threats?
Using historical sources as evidence
2. Create a flow chart or other graphic to present your views on the global environmental issue of climate change. Use the following questions to guide you in your thinking and planning.
 - (a) Situation: what is the issue?
 - (b) Background: why has it happened?
 - (c) Solutions: what are all the possible solutions you can think of? What are the consequences, good and bad, of each solution?
 - (d) Choices: what are the best possible solutions?
 - (e) Actions: what can we do about the issue? How can we influence decisions in the future?
Analysing cause and effect
3. Use the **Climate protests** weblink in the Resources tab to watch the video. Would you participate in a protest of this kind? Do you think this sort of action is likely to be effective? Why or why not? What else could you do to express your views on climate change? Discuss as a class.

Resources

 **Weblink** Climate protests

6.8 EXERCISES

Historical skills key: **HS1** Remembering and understanding **HS2** Sequencing chronology **HS3** Using historical sources as evidence **HS4** Identifying continuity and change **HS5** Analysing cause and effect **HS6** Determining historical significance

6.8 Exercise 1: Check your understanding

1. **HS1** Global warming is simply one element of climate change. To which other environmental impacts does this phrase refer?
2. **HS1** What is the most significant cause of climate change?
3. **HS1** Create a visual representation of the global climate conferences that have occurred since Kyoto. Include a description of the outcomes of these various meetings in your work.
4. **HS1** How did the outcome from the Paris Climate Conference differ to those that came before?

5. **HS1** What evidence demonstrates the growing environmental concerns held by people in the United States and Australia?
6. **HS1** Why are government organisations such as the American CERCLA so important to communities?
7. **HS1** How is the data that is collected during the five-yearly Great Barrier Reef Outlook Report used?

6.8 Exercise 2: Apply your understanding

1. **HS3 SOURCE 1** graphically illustrates the rise in global temperatures. Why might the data on which this graph is based be a driving force for change at the highest (governmental) level?
2. **HS3** Describe the features of the natural landscape visible in **SOURCE 2**. Why will such an environment be vulnerable as a result of climate change?
3. **HS3** Study **SOURCE 3**.
 - (a) List the types of international cooperation mentioned.
 - (b) How is the role of science given importance in **SOURCE 3**?
4. **HS3** What does **SOURCE 4** suggest about who is concerned about the impact of climate change?
5. **HS3** To what extent can the sources presented in this subtopic be considered 'historical'? Assess each of them for their usefulness and reliability as a historical source on the topic of global environmental issues. Try these questions in learnON for instant, corrective feedback. Go to www.jacplus.com.au.

6.9 Australia's environmental future

6.9.1 Change over time in environmental concern

In the future, it is likely that population increase, economic growth and climate change will see increasing pressures on Australia's natural environment. How the nation responds, including the sacrifices people are prepared to make, will affect our environmental future.

It is interesting to note the fluctuations in Australians' concern about the environment over the past few decades, and to see how these align with other national and global issues. In the early 1990s, a time of relative prosperity in Australia, concern about the environment was extremely high. Our biggest environmental concerns back then were air pollution, destruction of trees and ecosystems, ocean pollution and the depletion of the ozone layer. However, statistics gathered in 2007–08 saw a reduction in concern. Since then, Australians' levels of concern for the environment have returned to close to where they were at the turn of the millennium.

In 2017, Roy Morgan Research prepared a report for WWF-Australia based on 20 years' worth of data. This data included a recent survey of 1800 Australians aged 14 and above about their attitudes towards environmental issues. They found that, although 86 per cent of the population agreed that climate change was of concern, they were more concerned by other environmental issues. Their biggest concern was protecting oceans and marine life, including the Great Barrier Reef, which 94 per cent of people agreed was important. Almost 70 per cent of those interviewed felt that a healthy environment and a prosperous economy go hand in hand.

Variations according to location, age and gender

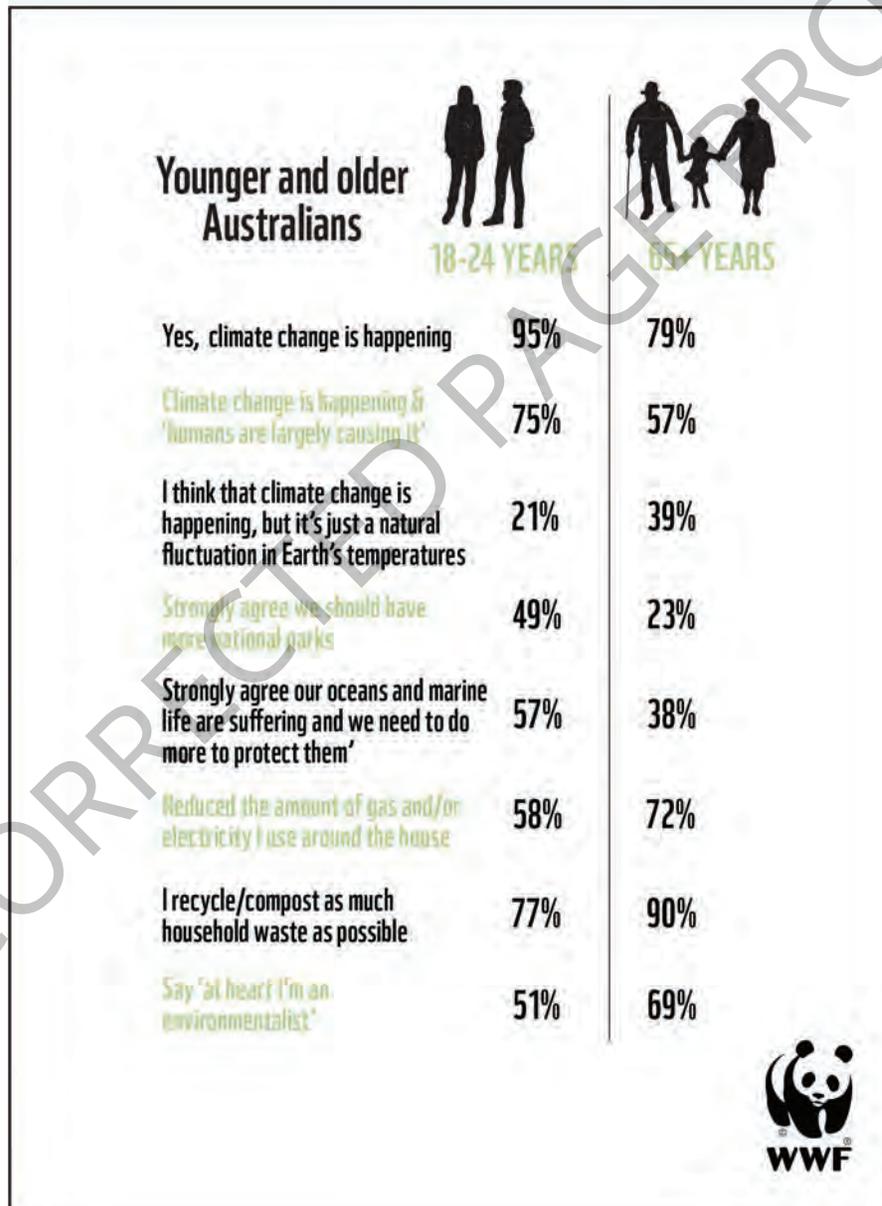
In 2017, more Australians who lived in capital cities reported concern about climate change (60 per cent) compared with people living outside capital city areas (52 per cent). The proportion of people concerned about environmental issues increased steadily with age, reaching a peak of 70 per cent in the age range 55–64 years, then declining to 54 per cent among Australians aged 65 years and over. Interestingly, similar proportions of 18- to 24-year-olds (53 per cent) and those aged over 75 (54 per cent) reported being concerned about environmental issues in general. On the specific issue of climate change, however, this younger age group (18–24) was the most concerned of all age groups, at 61 per cent. More females were concerned about water shortages (68 per cent), accumulation and disposal of household waste (67 per cent), and climate change (61 per cent) than males (61 per cent, 60 per cent and 53 per cent respectively).

Aspirations for the environment

Consultations have shown that Australians believe that since the natural environment affects everyone, all people, groups, businesses and nations have a responsibility to participate in protecting it. Further, they hope that collective efforts and measures by governments, non-government organisations and individuals will work for positive environmental outcomes for the future. In caring for and sustaining the environment, alignment between the different levels of government, collaboration and linking across public and private activities and initiatives, and international cooperation is seen as imperative.

SOURCE 3 shows a summary of the hopes of Australians for the environment in 2012, which was gathered through extensive consultations.

SOURCE 2 Persons concerned about environmental issues in Australia, by age group



SOURCE 3 An extract from the Australian Bureau of Statistics Measures of Australia's Progress: themes and aspirations report 2012

Environment

Healthy natural environment

Australians aspire to a healthy natural environment.

Appreciating the environment

Australians aspire to appreciate the natural environment and people's connection with it.

Protecting the environment

Australians aspire to care for and protect our natural environment.

Sustaining the environment

Australians aspire to manage the environment sustainably for future generations.

Healthy built environments

Australians aspire to healthy built environments.

Working together

Australians aspire for government, business and communities to work together locally and globally for a healthy environment.

6.9.2 Think global, act local

As the environment movement continues to inspire large-scale action worldwide, many people direct their efforts to making a difference in their local area. Growing community awareness of environmental issues is reflected in the rise of online and print publications that celebrate sustainability, going green and local activism. Countless small yet effective local projects focus on things that regular people can do to assist the environment every day, including buying products that are farmed organically, and participating in food swaps and community gardens. Many of these organisations believe that there is more opportunity to effect change at this grassroots level than there is through governments and political systems.

Sustainable neighbourhoods

In 2009, Melbourne's Yarra Council held its first Yarra Sustainability Awards, awarding prizes in the categories of 'Sustainable Business', 'Innovation in Sustainable Design', 'Community Action', 'Environment Group', 'Sustainable Garden' and 'Sustainable Household'.

The Dame Nellie Melba Early Learning and Vision for Environmental Sustainability (ELVES) program won first place in the 'Community Action' category. Each term the kindergarten runs a 'no waste lunch week', during which they encourage parents and children to create as little waste as possible at lunchtime by reducing packaging and composting food scraps. The compost is used on the kindy's gardens, or bottled and sent home with the children, where it can be used on domestic gardens. Not only is the ELVES program successful in making the kindergarten's children and their families aware of being less wasteful, it also acts as

a model for other communities wanting to develop a more environmentally sustainable lifestyle.

SOURCE 4 At Collingwood Children's Farm in Melbourne, the philosophies of permaculture, Landcare and organic farming guide farm activities. The farm was established by the community in 1979.



Grassroots organisations take the lead

Government departments and local councils have an important role to play in protecting the environment, but they cannot win the fight for the environment alone. Many non-government organisations (NGOs) represent the interests of those who want to protect the environment, working with local communities

to run campaigns on issues such as the anti-nuclear movement, sustainability, healthy rivers and oceans, Indigenous land rights and climate change. In many cases, these **grassroots** movements give a voice to those who would otherwise go unheard. Popular grassroots environmental organisations include Friends of the Earth (FOE) Australia, which runs numerous campaigns on a range of issues; the Australian Network of Environmental Defenders' Offices (ANEDO), which represents independent community environmental law centres around Australia; and Watermark Australia, which encourages citizens to discuss water use and management and other water issues facing Australia.

Action on climate change

SOURCE 5 The figure '350' is formed by people holding umbrellas at a mass environmental awareness event at the Sydney Opera House. 350 Australia is part of a global grassroots movement that aims to hold governments accountable to 'the realities of science and the principles of justice' through mass public action and online campaigns. The number 350 refers to the recommendation by scientists that the amount of CO₂ in the atmosphere must be reduced from its current level of 400 parts per million to below 350 parts per million.



While many environmental NGOs welcome participation by young people, the Australian Youth Climate Coalition (AYCC) was specifically designed to give Australian environmentalists aged 30 and under a real voice in the climate change debate. This youth-run and youth-led organisation grew from 5000 members at the beginning of 2009 to more than 50 000 members by the end of the year. In 2009, the organisation focused on three major projects, which involved running the first Australian youth climate summit; working with World Vision to hold the world's first national youth vote on climate change; and establishing AYCC International to send a **delegation** to the United Nations Climate Conference. They have also sent delegates into schools to talk about climate change and to mentor students, and have established the Youth Climate Leadership Program. In 2010, the AYCC was one of 20 NGOs chosen to represent the community's interests in the Non-Government Organisation Roundtable on Climate Change.

Based in inner Melbourne, the Yarra Climate Action Now (YCAN) is a community group made up of people concerned about climate change. Their aim is to work to achieve collective responses to climate change. Lobbying all levels of government, media campaigns, stalls at events and festivals, participating in organised events such as 100% Renewables and doorknocking all form part of their act local, think global philosophy. Other campaigns include involvement in 350, a global grassroots climate action organisation, Yarra Community Solar, Trains not Toll Roads and Lock the Gate.

SOURCE 6 On 8 May 2014, the Queensland Government gave preliminary approval for the creation of Australia's biggest mining project, the Carmichael coal mine, which would be owned by the Adani family. Environmental groups protested because of concerns about the CO₂ generated through the burning of coal, the detrimental environmental effects to the land and forest around the mine itself, and the longer-term effects on the water supply in the Great Artesian Basin. This set up a years-long fight in the courts and on the streets. In this image, taken in December 2018, protesters in Melbourne stage a 'Funeral for our Future', which organisers hoped would shame politicians into taking action to stop the Adani mine and start the transition away from fossil fuels.



DISCUSS

The future health of the environment is arguably the greatest challenge for present day individuals, groups and governments.

[Ethical Capability]

Explore more with my  HistoryAtlas

Explore more with [myWorld History Atlas](#)

Deepen and check your understanding of the topic with the following resources and auto-marked questions.

- [6.9 Australia's environmental future > Green politics](#)

6.9 ACTIVITY

Using all the sources in this subtopic as evidence, write an essay on the following topic: 'Australia's environmental future is in good hands'.

Using historical sources as evidence

6.9 EXERCISES

Historical skills key: **HS1** Remembering and understanding **HS2** Sequencing chronology **HS3** Using historical sources as evidence **HS4** Identifying continuity and change **HS5** Analysing cause and effect **HS6** Determining historical significance

6.9 Exercise 1: Check your understanding

1. **HS1** Overall, is the concern of Australians about environmental issues increasing or decreasing?
2. **HS1** Examine Australian attitudes to environmental issues in the years 2007–11. What is different about their concerns at this time compared to the years before and after this period? Can you suggest a reason for this change?
3. **HS1** In recent years, which (a) gender and (b) age group has been identified as having the most concern about climate change?
4. **HS1** Explain in your own words the meaning of the slogan 'Think global, act local'.
5. **HS1** Why might sustainable projects involving young children lead to a more environmentally sustainable community?
6. **HS1** How would you define a 'grassroots' organisation?
7. **HS1** What does the growth in membership of the AYCC suggest to you?
8. **HS1** List some of the projects the (a) AYCC and (b) YCAN have been involved in. What do you see as the similarities and differences between these two organisations?
9. **HS1** Why should caring for the environment be a collective effort? Which of the aspirations in **SOURCE 3** relates to this?

6.9 Exercise 2: Apply your understanding

1. **HS3** Refer to **SOURCE 1** and/or **SOURCE 2** to answer the following questions.
 - (a) Write 2–3 sentences about the trends shown in the **SOURCE 1** graph, including what you predict might happen in this data over coming years.
 - (b) According to the **SOURCE 2** infographic, what particular environmental issues concern both young and older Australians the most? Why do you think these issues might be of paramount concern?
 - (c) Which issues do these two segments of Australian society disagree on, and why might this be the case?
 - (d) How could the evidence in these two sources be a valuable starting point for (i) an education campaign about the environmental issues faced by Australia and (ii) the focus of government policy aimed at making all Australians more concerned and active when it comes to protecting our environment?
2. **HS3** What aspects of sustainability can be seen in **SOURCE 4**?
3. **HS3** Examine **SOURCE 6**.
 - (a) What issue are the people shown in the source campaigning for?
 - (b) What can you say about the demographics of their membership based on the people in this photograph?
4. **HS4** Suggest what might be the biggest environmental concern of Australians in 20 years. Justify your opinion.
5. **HS5** To what extent can grassroots movements have more success than more formal government policies? Explain your view.

Try these questions in learnON for instant, corrective feedback. Go to www.jacplus.com.au.

6.10 SkillBuilder: Conducting a historical inquiry

online only

What is a historical inquiry?

Historical inquiry is a process that involves formulating inquiry questions, identifying evidence such as primary and secondary sources, then interrogating, interpreting, analysing and evaluating those sources in order to reach conclusions about an event or events from the past.

Select your learnON format to access:

- an explanation of the skill (Tell me)
- a step-by-step process to develop the skill, with an example (Show me)
- an activity to allow you to practise the skill (Let me do it)
- questions to consolidate your understanding of the skill.



6.11 Thinking Big research project: Climate change action — the view from 2120

online only

SCENARIO

It is the year 2120. You are a historian working for the UN's IPCC — the panel who warned back in 2018 that we must keep global temperature rise to 1.5 °C above pre-industrial levels in order to avoid the worst outcomes of climate change. Did we act to save our planet?

Select your learnON format to access:

- the full project scenario
- details of the project task
- resources to guide your project work
- an assessment rubric.



on Resources



ProjectsPLUS Thinking Big research project: Climate change action — the view from 2120 (pro-xxxx)

6.12 Review

online only

6.12.1 Key knowledge summary

Use this dot point summary to review the content covered in this topic.

6.12.2 Reflection

Reflect on your learning using the activities and resources provided.



eWorkbook Reflection (doc-xxxxx)

Crossword (doc-xxxxx)



Interactivity The environment movement crossword (int-xxxx)

KEY TERMS

biosphere the part of the Earth and its atmosphere in which living organisms exist or that is capable of supporting life

blockaded blocking the movement of something

cold war a battle of ideologies, after World War II, between the Western bloc nations led by the superpower United States and the Eastern Bloc nations led by the superpower USSR

colonial nations a nation that has foreign settlements, or colonies, under its control

deforestation the removal of trees or forest

delegation a person or group appointed to represent others

ecotourism tourism to places having unspoiled natural resources

fallout the fall of radioactive particles after a nuclear explosion

gaia hypothesis the idea that all living organisms and inorganic matter are part of a dynamic system that regulates the biosphere

geysers a natural hot spring that intermittently ejects a column of water and steam into the air

global warming the observable trend of rising world temperatures over the past century, particularly the last few decades

grassroots involving ordinary people in a community or organisation

industrial revolution enormous social and economic changes brought about by the shift from hand manufacturing to large-scale factory production

manifesto a public declaration of principles, policies or intentions

organism an individual form of life

permaculture landscapes that are designed to mimic the patterns and relationships found in nature and yield an abundance of food, fibre and energy

radical a person who advocates fundamental or revolutionary changes in current practices, conditions or institutions

reservations pieces of land set apart by the federal government for a special purpose, especially to hold and control a Native American people

tailings refuse left over after ore has been processed

technocrats a scientific or technical expert with a high position

uranium a radioactive element used in the construction of nuclear fuels and weapons