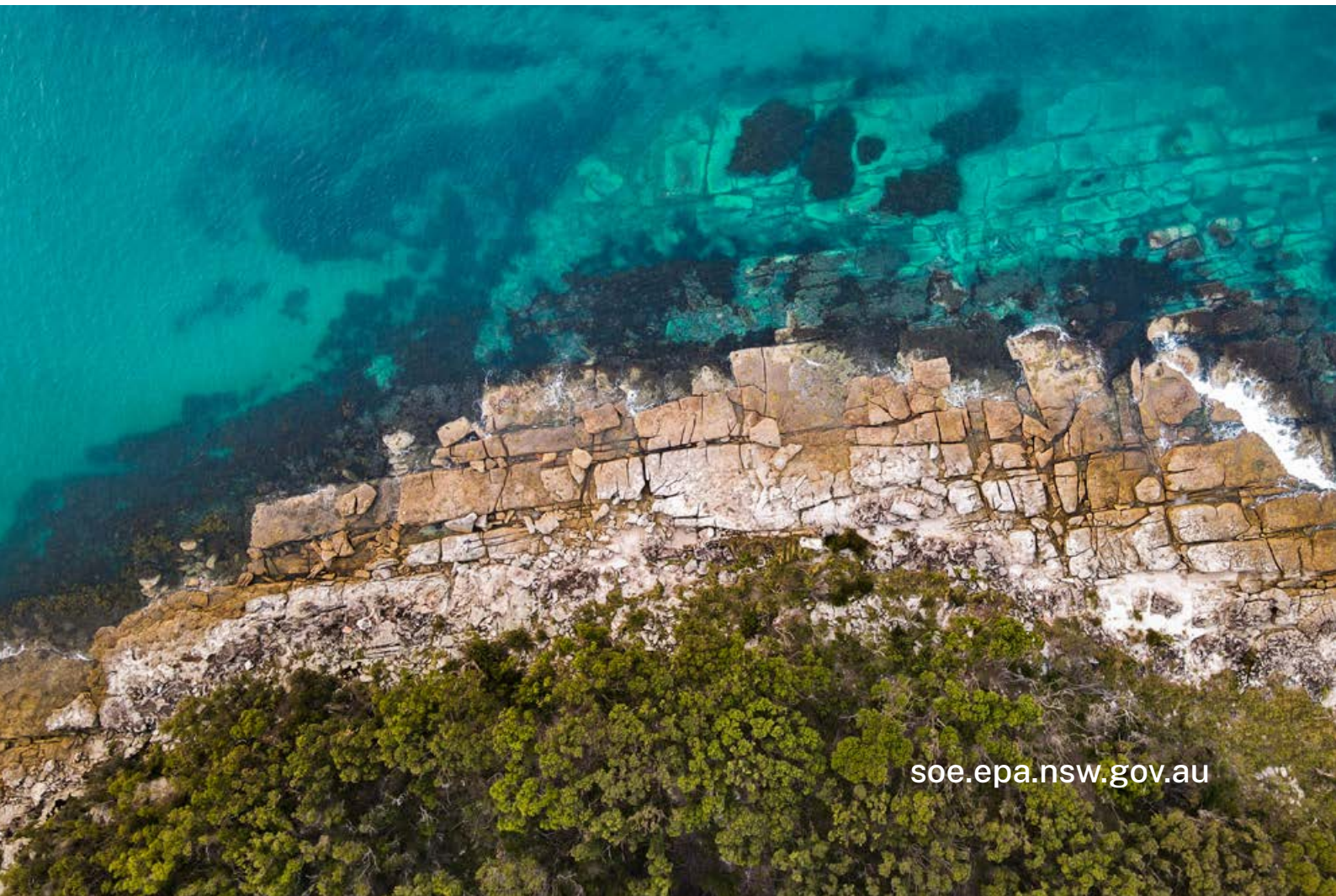
Environment Protection Authority

NSW State of the Environment 2024 Report Cards



Acknowledgement of Country

The NSW Environment Protection Authority acknowledges the Traditional Custodians of the land on which we live and work, honours the ancestors and the Elders both past and present and extends that respect to all Aboriginal people.

We recognise Aboriginal peoples' spiritual and cultural connection and inherent right to protect the land, waters, skies and natural resources of NSW. This connection goes deep and has since the Dreaming.

We also acknowledge our Aboriginal and Torres Strait Islander employees who are an integral part of our diverse workforce and recognise the knowledge embedded forever in Aboriginal and Torres Strait Islander custodianship of Country and culture.

EPA Aboriginal artwork: 'Nyuragil Barray Yawutung Warri', which translates as 'Spirited Country Journey Now' depicting the area from desert to mountains, by Gerard Black.

EPA Statement of Commitment to Aboriginal Peoples

The NSW Environment Protection Authority acknowledges Aboriginal peoples as the enduring Custodians of the land, sea, waters and sky of New South Wales.

We recognise the entire NSW landscape, including the lands, waters, plant and animal species, and seas, has spiritual and cultural significance to all Aboriginal peoples of NSW. By this understanding there is no separation of nature, wellbeing and culture. The health of the natural environment, and the health of people and culture, are intimately connected.

The EPA is committed to prioritising meaningful relationships with Aboriginal peoples to deepen our understanding of how best to care for Country. Through our partnership with the EPA Aboriginal Peoples Knowledge Group, we fully acknowledge and embrace the invaluable knowledge they hold and provide to enhance our work as environmental stewards.

The Group comprises members from Rainforest, Desert, Saltwater and Freshwater people, coming together as a unified voice for Country.

We listen to the Group as it guides, advises, nurtures and challenges us to uphold 12 principles outlined in the EPA's Statement of Commitment to Aboriginal People:

1. Work in respectful partnership with Aboriginal peoples.
2. Actively learn from and listen to Aboriginal voices, cultures and knowledges.
3. Respect Aboriginal peoples' knowledge and science as an equal to western science.
4. Weave Aboriginal knowledges and science with conventional science into the EPA's decision-making.
5. Act boldly and bravely to play our part to mend and heal Country together.
6. Ensure Aboriginal knowledge, science and Indigenous Cultural Intellectual Property (ICIP) is protected, and Aboriginal peoples have free, prior and informed consent.
7. Address both the tangible and intangible cultural elements of environmental protection.
8. Deliver on results that have direct benefits for Aboriginal communities.
9. Embed consistent, meaningful and trustworthy engagement with Aboriginal communities.
10. Develop Aboriginal cultural competency across the agency.
11. Increase Aboriginal employment across the agency to exceed public sector Aboriginal employment targets and identify specific occupational gaps.
12. Monitor the impact of this Commitment to Aboriginal peoples, Country, cultures and spirit.

This collaboration ensures our strategic initiatives are firmly grounded in principles of respect and sustainability.

Contents

What is NSW State of the Environment?

The NSW State of the Environment (SoE) is a comprehensive report that describes the condition of the environment across the State, major environmental issues and trends, and how these affect human and environmental health.

The SoE is produced every three years and submitted to the Minister for the Environment, who tables the report in both houses of parliament.

The full SoE is published online at soe.epa.nsw.gov.au.

What are the report cards?

The report cards are summaries of the report. Each SoE topic is condensed into one or two pages of key facts and figures, with infographics and a table of environmental indicators.

The report cards are a good way to quickly understand the key issues for each environmental topic.

How to use the report cards

Access them all in this handy set, or separately at the start of each topic.

The first page of each card gives you:

- a brief context
- infographics
- key findings for NSW
- the 'big picture' outlook.

The second page gives you an environmental indicator table, measuring:

- the status and trend of that indicator
- how reliable the information is.

Some topics are captured in a single page, with no indicator table.

Planetary boundaries

Some report cards mention planetary boundaries. These are a globally recognised tool that help identify the environmental limits within which humans can live safely on Earth.

When pollution or over-use of resources causes the transgression of a planetary boundary, we increase the risks of irreversible environmental damage. This threatens life as we know it.

For relevant topics, we've indicated where humans have breached the planetary boundary. For more on planetary boundaries, visit Global reporting models in the SoE 2024 report.

How are the topics organised?

There are 20 topics grouped into colour-coded themes: Land, Waters, Air and atmosphere, Biodiversity, Climate, People and industry, and Drivers. See image below.

Voice of Country is a standalone theme within the report. It was authored by the Aboriginal Peoples Knowledge Group (APKG), an advisory body to the NSW Environment Protection Authority.

Want to know more?

If you're keen to know more, you'll find the full topics on the website, with interactive charts and maps, and support material such as a glossary and list of units and measurements.

Voice of Country

A collective voice of Elders, Knowledge Holders and Custodians.

The Voice of Country theme was developed by the Aboriginal Peoples Knowledge Group (APKG), an advisory committee to the Environment Protection Authority. This theme includes details about the APKG members, ways that Aboriginal people identify, and aspects of our shared history and worldviews.

It includes a Truth Telling story where an APKG member provides a first-hand account of living conditions on a discrete Aboriginal community where residents are exposed to contamination and waste.

"We invite you to *ngarragi** – 'to listen, learn and remember'."

At a glance

- Aboriginal and Torres Strait Islander peoples are recognised as the oldest continuous culture on the planet.
- The APKG comprises seven Aboriginal Knowledge Holders descended from Saltwater, Freshwater, Rainforest and Desert Country of NSW. Their role is to guide, advise, nurture and challenge the NSW EPA.
- "We need to *ngarrangga** (listen deeply) to each other; walk together, value our differences, acknowledge our strength and have the courage to take action to implement change wherever it is required, for the betterment and care of Country and all peoples."
- Four of the APKG members share their stories, knowledge and perspectives on how we can work together to care for Country in a video series for the Voice of Country theme

The big picture

The APKG members look forward to continually building relationships and partnerships with the EPA to uphold the agency's Statement of Commitment to Aboriginal Peoples.

APKG recommendations

- The APKG and EPA to work in partnership to develop legislative reform to commit government to implement real change, and to ensure the protection of Country and people, and Aboriginal sacred sites.
- Include Aboriginal people in decision-making and the development of programs that aim to sustain healthy biosystems.
- Ensure Aboriginal knowledges and cultures are valued and promoted alongside western sciences through the inclusion of Aboriginal people on scientific, biodiversity and conservation (environmental management) committees.
- Increase the allocation of funding for healthy Country programs.
- Initiate community consultation, through public forums lead by the APKG, to amplify the voice of Aboriginal people to drive systemic reform and hold governments and services accountable for the health and protection of Country.
- Design a reporting framework for the APKG, outlining the actions and deliverables on the work being undertaken by government bodies and stakeholders in the sustainability and protection of the environment.

*Gathang language

Soil condition

Soil is central to all life. Soil health is threatened by intensive land use, population growth and an increasingly extreme climate.

Soil is a living material, composed of organic and inorganic matter.

Healthy soil provides a variety of ecosystem services, such as filtering water, storing carbon and supporting flood regulation. It is also home to a complex web of organisms, including fungi, bacteria and invertebrates, which facilitate nutrient cycling and maintain soil structure.

Much of the changes in soil condition began after European colonisation. Aboriginal peoples' practices for caring for Country, which included sustainable management of soils, were detrimentally impacted under European practices.

At a glance

How NSW is tracking

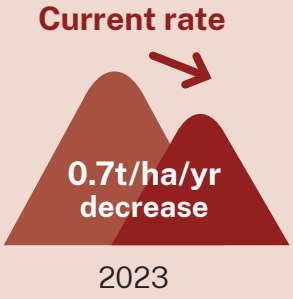
- Most soils in NSW are in a moderate condition.
- About 12.6% of the original soil organic carbon level has been lost from the top 30cm of soil since European colonisation.
- Much of the State's agricultural land is becoming slightly more acidic. Soil pH changed by at least 0.15 units of pH between 2006 and 2020.

The big picture

Soil is a non-renewable resource that forms over billions of years, making its preservation critical for future generations. Australia's soils form slowly, and soil erosion can be a more serious problem in Australia than globally.

Hillslope erosion

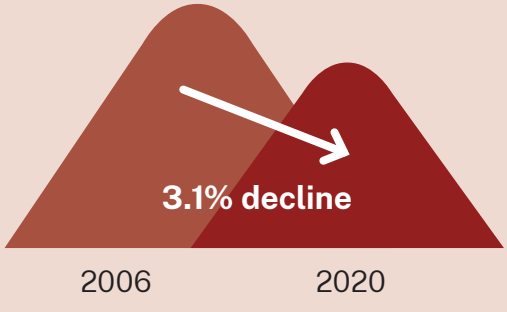
This is measured in tonnes lost per hectare per year.



The erosion rate fell in 2023 but is predicted to **increase** in areas that receive more extreme rainfall.

Organic carbon stocks

Soil organic carbon stocks **declined 3.1%** between **2006** and **2020**. Storing carbon in soil can help to slow down climate change.



Soil condition

NSW status and trend indicators

These indicators track soil condition and associated degradation processes.

Indicator	Environmental status	Environmental trend	Information reliability
Hillslope erosion	 MODERATE	 Getting better, Stable, Getting worse	 Reasonable
Soil pH (acidification)	 MODERATE	 Getting better, Stable, Getting worse	 Reasonable
Organic carbon	 MODERATE	 Getting better, Stable, Getting worse	 Reasonable
Wind erosion	 POOR	 Getting better, Stable, Getting worse	 Limited
Salinisation	 MODERATE	 Getting better, Stable, Getting worse	 Reasonable

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** Good Reasonable Limited

Indicator definitions

Hillslope erosion – when soil is washed down hillsides due to rain, erosion and landslides.

Soil pH – a measure of the acidity or alkalinity of the soil. A pH below 7 is acidic. A pH above 7 is alkaline.

Soil organic carbon – includes all organic material, such as decomposing plants and animals. Ideally, soil organic carbon is at least 60% of soil organic matter.

Wind erosion – a natural process that moves soil from one location to another by wind power.

Salinisation – when salt content in soil increases, it is known as salinisation.

Protected areas and conservation

Building a network of terrestrial protected areas across NSW is key to securing and conserving our diverse ecosystems, and the plants and animals they support.

Terrestrial protected areas are clearly defined areas of land that are formally managed to conserve or improve natural and cultural heritage, biodiversity, plant and animal habitat, and resilience to climate change.

For Aboriginal peoples, colonisation has resulted in dispossession of their traditional lands and prevented access to Country, especially on private lands. Opportunities are now emerging for Aboriginal peoples and communities to access, protect and manage Country through formal and informal agreements on both public and private lands.

At a glance

How NSW is tracking

- About 10.4% (or 8.3 million hectares) of NSW are formal protected areas that contribute to Australia's National Reserve System.
- Most protected areas fall within the public reserve system (almost 7.7 million hectares or 9.7% of NSW).
- Much of the remaining area is protected through private conservation agreements managed by the Biodiversity Conservation Trust.
- About 30% of the NSW national parks estate is jointly managed with Aboriginal custodians under 34 agreements.
- Pressures on, and threats to, protected areas continue to include climate change, invasive pests and weeds, and fragmentation and habitat loss from land use changes and clearing.

The big picture

The indicator 'total area of the NSW terrestrial protected areas network' aligns to the 'Land system change' planetary boundary. Globally, this boundary has been crossed.

Protected areas network

The protected areas network covered **10.4%** of NSW as at 30 December 2023.

Public protected areas

Public protected areas made up **93%** of the protected areas network in NSW as at 30 December 2023.

Protected areas and conservation

NSW status and trend indicators

These indicators assess the status of protected areas and conservation in NSW.

Indicator	Environmental status	Environmental trend	Information reliability
Total area of the NSW terrestrial protected areas network	 MODERATE	 Getting better, Stable, Getting worse	 Good
Growth in public protected areas	 MODERATE	 Getting better, Stable, Getting worse	 Good
Growth in private protected areas	 MODERATE	 Getting better, Stable, Getting worse	 Good
Protected areas owned or jointly managed by Aboriginal people	 MODERATE	 Getting better, Stable, Getting worse	 Good
Coverage of regional ecosystems in NSW protected areas network	 POOR	 Getting better, Stable, Getting worse	 Reasonable

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** ■■■ Good ■■■ Reasonable ■■■ Limited

Indicator definitions

Total area of the NSW terrestrial protected areas network – total of public and private land areas in the NSW protected areas network, including land permanently protected under legal mechanisms (in perpetuity).

Growth in public protected areas – changes in area and number of national parks and reserves.

Growth in private protected areas – changes in area and number of private land protected in perpetuity under agreements administered by the Biodiversity Conservation Trust.

Protected areas owned or jointly managed by Aboriginal people – as described.

Coverage of regional ecosystems in the NSW protected areas network – new indicator assessing progress towards a 'comprehensive, adequate and representative' protected areas system in NSW.

Rivers and wetlands

Declines in river and wetland health are reducing biodiversity of water-dependent plants and animals, including waterbirds, fish, frogs and turtles.

Rivers and wetlands are lifelines for both ecosystems and human societies. They serve important roles as freshwater sources, biodiversity hotspots and natural flood buffers. For Aboriginal peoples, water is a living thing and intrinsic to culture.

NSW rivers are generally in fair condition. As the climate becomes hotter and drier, wetlands and the species that depend on them will continue to be negatively impacted.

Water quality indicators are getting worse for inland rivers and wetlands, significantly affecting fish and waterbird communities.

At a glance

How NSW is tracking

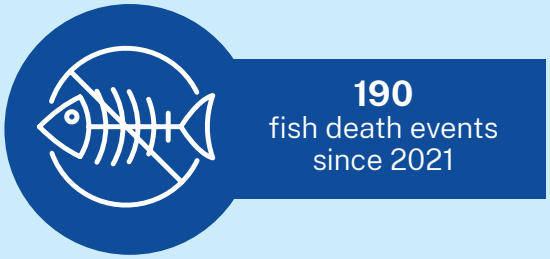
- Many areas of the Murray–Darling Basin have poor to very poor river condition. Coastal rivers are generally in better condition, particularly on the southern coasts.
- Loss of river connectivity and access to water significantly impacts Aboriginal communities' mental and physical health.
- Good rainfall in the past three years has helped improve outcomes in some areas but has also contributed to an increase in the number of sites exceeding nitrogen and phosphorus targets compared to 2018–20.
- More fish kill events have occurred in the past five years, with an average of 69 per year between 2019–23, up from an average of 21 between 2009–18.

The big picture

- This topic's 'nitrogen and phosphorous levels' indicator aligns to the 'modification of biochemical flows' planetary boundary. Globally, this boundary has been crossed.
- This topic's 'river condition index for NSW rivers', 'health of fish communities', 'wetland extent', 'wetland condition' and 'waterbird abundance and breeding' indicators align to the 'biosphere integrity' planetary boundary. Globally, this boundary has been crossed.

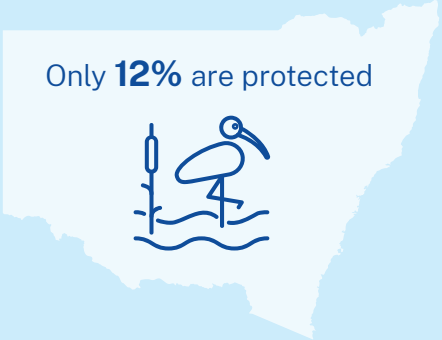
Fish death events

The NSW Government has investigated **190 fish death events** since 2021.



Inland wetlands

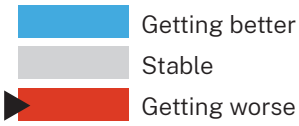
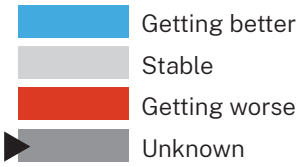
Only **12%** of inland wetlands in NSW are **protected**.



Rivers and wetlands

Rivers and wetlands indicators

This topic adopts four indicators to assess the status and trends of rivers and three indicators to assess the status and trends of wetlands.

Indicator	Environmental status	Environmental trend	Information reliability
River condition index for NSW rivers	 MODERATE	 Getting better, Stable, Getting worse	 Reasonable
Nitrogen and phosphorus levels	 MODERATE	 Getting better, Stable, Getting worse	 Reasonable
Salinity	 GOOD	 Getting better, Stable, Getting worse	 Reasonable
Health of fish communities	 POOR	 Getting better, Stable, Getting worse, Unknown	 Reasonable
Wetland extent	 MODERATE	 Getting better, Stable, Getting worse	 Limited
Wetland condition	 MODERATE	 Getting better, Stable, Getting worse	 Limited
Waterbird abundance and breeding	 POOR	 Getting better, Stable, Getting worse	 Good

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** Good Reasonable Limited

Groundwater

Groundwater is a valuable resource in NSW. It supports a wide range of plants and animals in many diverse environments, and can be extracted for use in agriculture, industry and households.

Groundwater holds deep cultural significance for Aboriginal peoples. It is an important part of Dreaming stories and a source of spiritual meaning. For more than 65,000 years, Aboriginal knowledge of groundwater sources has been crucial for survival in Australia's arid regions.

There is increasing demand for reliable supplies of safe, accessible drinking water to support Australia's population. However, only about 30% of Australia's groundwater is drinkable. The rest contains overly high concentrations of bicarbonates or salt.

At a glance

How NSW is tracking

- Over the past three years, there were no exceedances of groundwater extraction limits, with a reduction in groundwater use overall due to good rainfall, reducing dependence on groundwater.
- Although monitoring across NSW indicates that groundwater-dependent ecosystems are in moderate condition and stable, information on the extent and condition of them is still lacking. More work is being done to address these shortfalls.

The big picture

To support their water needs, communities will increasingly turn to sources other than surface water. This means that global groundwater extraction levels will continue to increase.

Groundwater and agriculture

Agriculture accounts for **75%** of groundwater use in NSW.

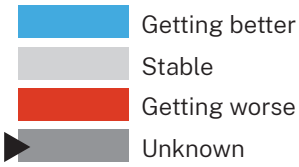
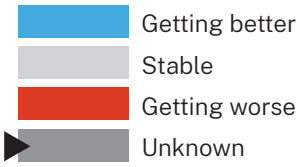
Regional towns

More than **250** regional towns are now **reliant** on groundwater for most of their everyday water needs.

Groundwater

NSW status and trend indicators

These indicators relate to trends that can impact on groundwater availability and quality for both humans and the environment.

Indicator	Environmental status	Environmental trend	Information reliability
Long-term extraction limit: entitlements	 GOOD	 Getting better, Stable, Getting worse	 Reasonable
Aquifer sustainability	 UNKNOWN	 Getting better, Stable, Getting worse, Unknown	No data available
Groundwater quality	 UNKNOWN	 Getting better, Stable, Getting worse	 Reasonable
Condition of groundwater-dependent ecosystems	 MODERATE	 Getting better, Stable, Getting worse, Unknown	 Reasonable

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** ■■■ Good ■■■ Reasonable ■■■ Limited

Indicator definitions

Long-term extraction limit: entitlements – trends in annual groundwater extraction in metered systems. Average extraction levels are assessed annually to ensure the long-term average annual extraction limit is not exceeded.

Aquifer sustainability – factors that impact on an aquifer's ability to continue being used for groundwater extraction. This indicator is listed as unknown due to lack of data.

Groundwater quality – assesses the quality of the water extracted from groundwater sources. This indicator is listed as unknown due to lack of data.

Condition of groundwater-dependent ecosystems – looks at the health and extent of groundwater-dependent ecosystems.

Coastal and marine

Ongoing declines in all coastal and marine indicators show that these environments are increasingly at risk. This will continue as our population grows and our climate changes.

Coastal, estuarine and marine ecosystems are vital for biodiversity, providing habitat for countless species and playing a role as marine life nurseries.

For Aboriginal peoples, the marine environment is not just a resource, but a fundamental part of identity, culture and wellbeing.

The NSW coastline has incredible environmental, economic, social and cultural significance to Australians, with coastal towns and cities being home to roughly 85% of the NSW population.

At a glance

How NSW is tracking

- Most estuaries and coastal swimming sites have water quality that is suitable for swimming, but this varies, especially after heavy rainfall.
- Coastal vegetation and habitats (saltmarsh, mangroves and seagrass) continue to be threatened by coastal development and climate change. While in some locations they are declining, in others coverage has improved due to good management.
- Kelp forest cover declined at all six locations sampled between 2019 and 2023. Losses within the sampling period ranged from 25% to 62% of the 2019 baseline.
- Despite limited data for assessing statewide trends of coastal fish species, current monitoring of fisheries suggests fish stocks are stable, although some species are under threat.

The big picture

This topic's indicators 'extent of estuarine macrophytes' and 'coastal fish stocks' both align to the 'biosphere integrity' planetary boundary. Globally, this boundary has been crossed.

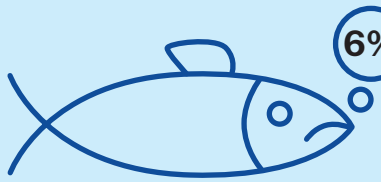
Quality of swimming sites

Swimming sites graded 'very good' or 'good' **declined to 73%** in 2022–23, down from 80% in 2021–22.

2021–22 2022–23

Depleted fish stocks

Fish stocks listed as depleted have increased by **6%** since 2020.



increase in depleted stocks

Coastal and marine

Coastal and marine indicators

This report uses six indicators to assess the status and trends of coastal and marine environments in NSW.

Indicator	Environmental status	Environmental trend	Information reliability
Proportion of marine waters protected in marine parks or reserves	MODERATE	Getting better Stable Getting worse	Good
Percentage of ocean and estuarine beaches with beach suitability grades for swimming of 'good' or better	GOOD	Getting better Stable Getting worse	Good
Estuarine water quality (chlorophyll-*a* and turbidity)	MODERATE	Getting better Stable Getting worse	Good
Extent of estuarine macrophytes	MODERATE	Getting better Stable Getting worse	Reasonable
Levels of estuarine catchment disturbance	UNKNOWN	Getting better Stable Getting worse	Limited
Coastal fish stocks	MODERATE	Getting better Stable Getting worse	Reasonable

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** Good Reasonable Limited

Indicator definitions

Estuarine water quality (chlorophyll-*a* and turbidity) – measures estuarine water quality by algae (chlorophyll-*a*) and water clarity (turbidity).

Air quality

Clean air is essential for the health of humans, animals and the environment. Monitoring air pollutants helps us maintain our good air quality in NSW.

Air quality measures the amount of pollutants in the air we breathe relative to their potential impacts on our health. Good air quality means that while some substances and pollutants could still be found in air, they are not considered to be harmful.

In NSW, the major air pollutants monitored are particles and ozone. These mostly come from bushfire smoke, dust, and fossil fuel combustion from motor vehicles and industry.

At a glance

How NSW is tracking

- NSW air quality met national standards most of the time.
- The number of days exceeding these standards varies greatly each year depending on natural climate variations and local weather.
- While the community is generally satisfied with air quality in NSW, where concerns were raised at a local level, air pollution from road traffic and trucks was identified most often.
- Without addressing air pollution, health impacts will continue to increase as our population grows and becomes denser.

Days air quality standards exceeded

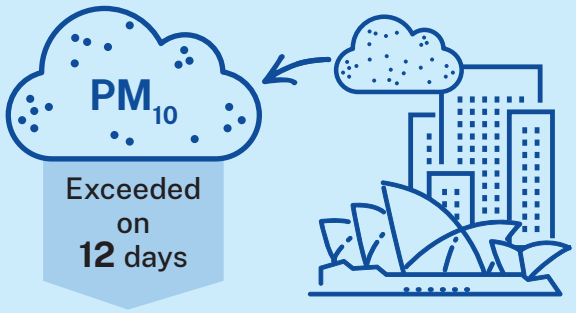
Air quality standards for one or more pollutants were **exceeded** on **47 days** in **2023**. This compares with 19 days in 2022 and 53 days in 2021.

The big picture

The World Health Organization (WHO) estimates that air pollution is as serious as other major global health risks, such as exposure to tobacco smoke and an unhealthy diet.

Particulate matter pollution

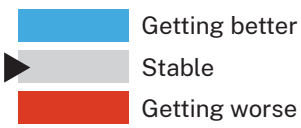
Sydney exceeded air standards for PM_{10} on **12** days in 2023.



Air quality

NSW status and trend indicators

These indicators measure air pollution concentrations in NSW.

Indicator	Environmental status	Environmental trend	Information reliability
Particles as PM_{10}	 MODERATE	 Getting better, Stable, Getting worse	Good
Particles as $PM_{2.5}$	 MODERATE	 Getting better, Stable, Getting worse	Good
Ozone (O_3)	 MODERATE	 Getting better, Stable, Getting worse	Good
Carbon monoxide (CO)	 GOOD	 Getting better, Stable, Getting worse	Good
Nitrogen dioxide (NO_2)	 GOOD	 Getting better, Stable, Getting worse	Good
Sulfur dioxide (SO_2)	 GOOD	 Getting better, Stable, Getting worse	Good

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** ■■■ Good ■■■ Reasonable ■■■ Limited

Indicator definitions

PM_{10} – Particles which are 10 micrometres (10µm) or less in diameter.

$PM_{2.5}$ – Particles which are 2.5 micrometres (2.5µm) or less across.

Greenhouse gas emissions

Human activities release excessive greenhouse gases into our atmosphere, leading to increased temperatures and climate change.

Global concentrations of greenhouse gases from human activities have been increasing since the pre-industrial era (before 1750). In NSW, greenhouse gas emissions mostly come from burning fossil fuels and industrial processes.

There is an urgent need to reduce emissions in order to slow down global warming and mitigate the worst impacts of climate change.

At a glance

How NSW is tracking

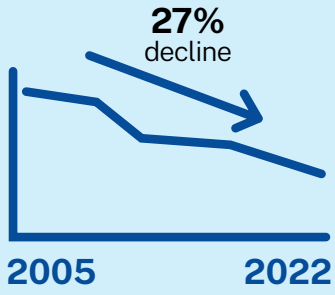
- NSW net greenhouse gas emissions in 2021–22 were 111 million tonnes tCO2-e, which was 27% lower than the emissions in 2004–05.
- The highest contributor, the electricity generation sector, has been slowly decreasing due to uptake of renewable energy.
- The emissions of the second highest contributor, the transport sector, only decreased marginally (2%) compared to 2004–05 levels.
- Since 1993, the land use, land use change and forestry sectors have acted as 'carbon sinks' absorbing more carbon than they emit and contributing significantly to the reduction in net emissions in NSW.
- Annual emissions continue to decouple (separate) from both population and economics drivers.

The big picture

This topic's 'global concentrations of greenhouse gases' indicator aligns to the 'climate change' planetary boundary. Globally, this boundary has been crossed.

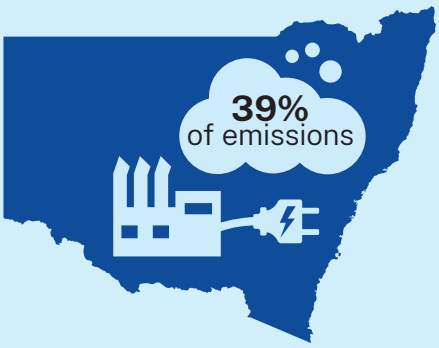
Greenhouse gas emissions rates

In 2021–22, the rate of NSW greenhouse gas emissions was **27% lower** than **2005** rates. However, gases continue to accumulate in the atmosphere, and are yet to peak.



Highest emitter

In **2021–22, stationary energy** (electricity generation) remained as the highest emitter, contributing **39%** of NSW emissions.



Greenhouse gas emissions

NSW status and trend indicators

These indicators track important metrics on greenhouse gases.

Indicator	Environmental status	Environmental trend	Information reliability
Global atmospheric concentrations of greenhouse gases	 POOR	 Getting better, Stable, Getting worse	 Good
Annual net NSW greenhouse gas emissions	 POOR	 Getting better, Stable, Getting worse	 Good
Annual NSW per capita greenhouse gas emissions	 POOR	 Getting better, Stable, Getting worse	 Good

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** ■■■ Good ■■■ Reasonable ■■■ Limited

Indicator definitions

Global concentrations of greenhouse gases – the amount of greenhouse gases present in the Earth's atmosphere, measured in parts per million (ppm), parts per billion (ppb), or parts per trillion (ppt). These gases include carbon dioxide, methane and nitrous oxide.

Annual net NSW greenhouse gas emissions – the total amount of greenhouse gases emitted minus the amount sequestered or absorbed by activities such as land use, land-use change, and forestry.

Annual NSW per capita greenhouse gas emissions – the average amount of greenhouse gases emitted per person in NSW over a year.

Plants

Plants play a vital role in supporting all life on Earth. The continuing decline of native vegetation threatens the health of humans, wildlife and ecosystems.

Plants form the basis of most ecosystems. They filter water and air, provide animal habitat, and regulate global climate. Identifying and protecting threatened plant species is vital to protecting local biodiversity.

Aboriginal peoples have maintained a deep and intricate relationship with plants. Ensuring the ongoing health of plants is a critical part of caring for Country.

Reduction in the number of plant species will directly affect other species. Land clearing, pollution, invasive species and climate change are major threats to plant biodiversity.

At a glance

How NSW is tracking

- Although the annual rate of native vegetation clearing for agriculture and infrastructure has been declining since 2018, it remains high compared to the previous decade.
- The Australian National University's *Australia's Environment* 2023 report noted that woody native regrowth in NSW has been favourable in wet years.
- Modelling undertaken in the assessment of the NSW Biodiversity Indicator Program indicates that, without effective management, only 50% of the 657 plant species listed as threatened are predicted to survive in 100 years' time.

The big picture

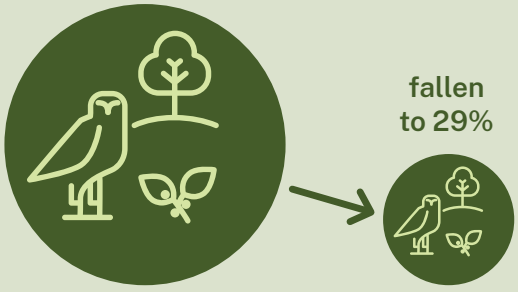
- This topic's 'extent of native vegetation' and 'clearing of native vegetation' indicators align to the 'land system change' planetary boundary. Globally, this boundary has been crossed.
- This topic's 'ecological carrying capacity' and 'number of threatened species listed' indicators align to the 'biosphere integrity' planetary boundary. Globally, this boundary has been crossed.

Threatened species

The number of threatened plant species **increased by 18** between 2020 and 2024, bringing the **total** to **657**.

Ecological carrying capacity

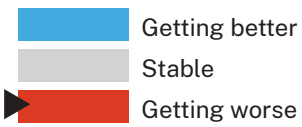
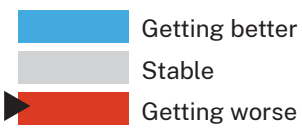
The ability of NSW vegetation to support native plants, animals and ecosystems has **fallen to 29%** of natural levels before industrialisation.



Plants

NSW status and trend indicators

These indicators describe the status and condition of native plants in NSW.

Indicator	Environmental status	Environmental trend	Information reliability
Extent of native vegetation	 POOR	 Getting better; Stable*** ; Getting worse	 Reasonable
Clearing of native vegetation	 POOR	 Getting better; Stable; Getting worse	 Reasonable
Habitat condition	 POOR	 Getting better; Stable; Getting worse	 Reasonable
Ecological carrying capacity	 POOR	 Getting better; Stable; Getting worse	 Reasonable
Number of threatened species listed	 POOR	 Getting better; Stable; Getting worse	 Reasonable

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** Good Reasonable Limited

Indicator definitions

Extent of native vegetation – the area of land covered by native vegetation across NSW.

Clearing of native vegetation – how much native vegetation has been cleared in NSW for agriculture and infrastructure.

Habitat condition – condition of native plant habitats.

Ecological carrying capacity – ability of vegetation across NSW to support native plant and animal species and ecosystems.

Number of threatened species listed – how many plant species are listed as critically endangered, endangered and vulnerable in the *Biodiversity Conservation Act 2016*.

Animals

Habitat loss and invasive species continue to threaten native animals. Protecting our native animals will become more important as our population grows and the climate changes.

Many animals living in Australia are found nowhere else. They are closely linked to overall health and functioning of ecosystems, and the loss of an animal species may affect other species.

Native animals hold significant cultural values for Aboriginal peoples, serving as vital totems that embody connection to Country.

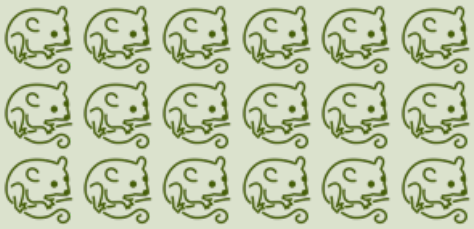
At a glance

How NSW is tracking

- The number of species listed as 'threatened' in NSW continues to increase, with 18 species added between December 2020 and June 2024, bringing the total to 343.
- Across NSW, the distribution of native land mammals is continuing to decrease.
- While native birds have been more resistant to declines than native mammals, their populations are also declining.
- The number of critically endangered native fish in NSW has increased.
- Invasive species continue to exert pressure on native plants and animals. New threats, such as red fire ants, will continue to pose significant biodiversity risks if not eradicated. They also bring substantial economic costs of managing and controlling infestations.
- After 30 years of work, invasive mammals have been successfully controlled on all NSW offshore islands, with continued monitoring and ecosystem recovery now taking place.
- Some good outcomes have been reported for certain species, such as the yellow-footed rock wallaby. Numbers have increased from 100 animals in 2003 to 299 in 2023.

Threatened species

The number of **threatened** animal species listings has **increased by 18** since 2021.



2021 2024

Future extinctions

Only **50%** of species listed as threatened are predicted to still be living in **100 years' time**.

The big picture

The topic's indicators, other than 'invasive animal species: distribution and impact', align to the 'biosphere integrity' planetary boundary. Globally, this boundary has been crossed.

Animals

NSW status and trend indicators

These indicators consider the abundance, distribution and population of native animals in NSW.

Indicator	Environmental status	Environmental trend	Information reliability
Number of threatened species listed	MODERATE	Getting better Stable Getting worse	Reasonable
Native mammals: population and distribution	POOR	Getting better Stable Getting worse	Limited
Native birds: population and distribution	MODERATE	Getting better Stable Getting worse	Reasonable
Native fish communities	POOR	Getting better Stable Getting worse	Reasonable
Invasive animal species: distribution and impact	POOR	Getting better Stable Getting worse	Reasonable

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** ■■■ Good ■■■ Reasonable ■■■ Limited

Indicator definitions

Number of threatened species – measures the number of species listed as critically endangered, endangered and vulnerable in the *Biodiversity Conservation Act 2016*.

Native mammals: population and distribution – measures the populations and distribution of native mammals.

Native birds: populations and distribution – measures the populations and distribution of native birds.

Native fish communities – measures the abundance and diversity of native fish.

Invasive animal species: distribution and impact – measures the number of invasive species (introduced animals such as rabbits, foxes and carp) on land and in water.

Health of Country

Healthy Country, healthy people, healthy culture.

For Aboriginal peoples, Country is everything in the landscape – the people, plants and animals, as well as the air, soil and rocks. It is also the relationships between them. Caring for Country is more than just caring for the environment; it is taking care of Country as if it is kin.

Aboriginal peoples value culturally significant species – those that provide food and medicine, and signal the health of Country. Greater inclusion of Aboriginal knowledges will help to manage these species and safeguard biodiversity.

Aboriginal peoples' involvement in caring for Country continues to increase, using cultural knowledge to protect biodiversity and maintain cultural sites and practices.

At a glance

How NSW is tracking

- Truth Telling is an important part of healing. Country needs the truth to be told.
- Many Aboriginal people, organisations and communities are leading the way in how biodiversity should and could be better managed.
- Cultural Fire practices are being revived by Aboriginal communities to improve the health of Country and communities. Their value in reducing risk of bushfires and improving ecosystem health is increasingly understood across government agencies and within the broader community, though there are still significant barriers.
- There is currently very limited formal recognition of the rights and interests of Aboriginal peoples in biodiversity conservation in NSW, including protection of culturally significant species. However, some notable innovative programs that partner with Aboriginal peoples to protect cultural values on public and private lands have been developed in the past three years.
- Community-based Indigenous Ranger programs have been highly successful in ecological and socio-economic outcomes over the past 25 years. In NSW all community rangers are funded by the Commonwealth. NSW is one of only two jurisdictions in Australia that does not fund an Indigenous Ranger program.

Caring for Country

As at August 2024, there were **15** community-led Indigenous Ranger groups in NSW.

Protecting Country

As at August 2024, there were **11** Indigenous Protected Areas* in NSW.

* IPAs are lands managed by Aboriginal community groups.

The big picture

Aboriginal peoples have a moral, cultural and spiritual inheritance and obligation to protect Country (land, sea, sky) because Country is integral to the cultures of Aboriginal peoples.

Climate change

NSW will be warmer, the sea surface warmer and sea levels higher owing to climate change.

Climate change is an urgent global issue.

Certain human activities, such as burning fossil fuels, emit greenhouse gases. The accumulation of greenhouse gases in the atmosphere leads to increasing land temperatures, warmer sea surface temperatures, and rising sea levels.

Aboriginal peoples gain insight into climate shifts by monitoring seasonality over long periods. This enables adaptation and supported survival over millennia.

At a glance

How NSW is tracking

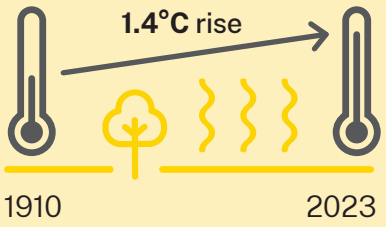
- NSW average surface temperatures over land have risen 1.4°C since national records began in 1910.
- Several climate drivers, such as El Niño and La Niña, contribute to the State's seasonal rainfall, which makes it difficult to establish clear trends.
- In NSW, sea level rose by 12 centimetres between 1991 and 2023 and is projected to rise by up to one metre by the end of the 21st century.
- Sea surface temperatures in the Sydney area have increased by about 0.14–0.2°C per decade since the 1950s.

The big picture

Average global temperatures in 2014–23 have already risen by a range of 1.06–1.30°C above pre-industrial levels (1850–1900). The increase is projected to exceed 2.2–3.5°C by the end of this century if further action is not taken to limit greenhouse gas emissions.

Land temperature

The average surface temperature over land in NSW has risen by **1.4°C** since **1910**



Sea level

In NSW, sea level rose **12cm** between 1991 and 2023

Climate change

NSW status and trend indicators

These indicators report on NSW Government monitoring. They reflect the global nature of climate change, and enable comparison between countries.

Indicator	Environmental status	Environmental trend	Information reliability
Annual mean land temperature	 MODERATE	 Getting better, Stable, Getting worse	 Good
Sea level rise	 MODERATE	 Getting better, Stable, Getting worse	 Good
Sea surface temperature	 POOR	 Getting better, Stable, Getting worse	 Good

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** Good Reasonable Limited

Extreme climate and weather

Rising temperatures are driving extreme weather conditions, including more intense rainfall events, ‘hot days’ and severe fire weather days in NSW.

Extreme weather is weather that occurs with extreme severity, such has heavy rainfall over a short period, or when least expected, such as a very hot day in winter. Extreme weather events could cause damage to the environment, communities and infrastructure.

Although extreme weather occurs naturally, human-induced climate change is changing the frequency, intensity or duration (happens more, or less often, becomes more intense or lasts longer) of different types of extreme weather events.

Increased frequency and intensity of extreme weather events causes damage to cultural sites and landscapes.

At a glance

How NSW is tracking

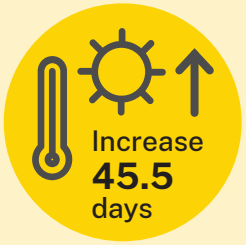
- The number of ‘hot days’ and severe fire weather days are both projected to increase by 2080–99. Severe fire weather days occur when there is a combination of wind, high temperatures, low humidity and no recent rainfall, resulting in Forest Fire Danger Index > 50.
- Extreme rainfall (99th percentile of precipitation in millimetres per day) is projected to increase or decrease depending on the season and geographical area. Further research is needed to understand the uncertainties in the projections.
- Significant uncertainty remains around rainfall projections, meaning it is difficult to project when drought conditions will occur.

The big picture

Globally, communities and governments are committed to reducing greenhouse gas emissions to mitigate climate change. They are developing policies and programs to prepare for, respond to and increase resilience to extreme weather.

Hot days

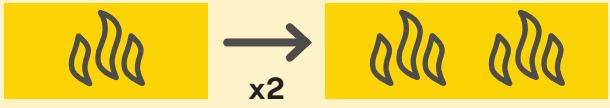
By 2080–99, NSW may experience an average increase of **45.5** hot days per year under a high-emissions scenario.*



2080–99

Severe fire weather days

Severe fire weather days are projected to increase, on average, by **9.4** per year by 2080–99 under a high-emissions scenario. This is twice as many severe fire weather days as now.



Current 2080–99

*High-emissions scenario is estimated warming of 2.8–4.6 degrees by 2100

Net Zero Plan Stage 1: 2020–30

The *Net Zero Plan Stage 1: 2020–30* is the foundation for NSW to reduce greenhouse gas emissions. Its delivery is underway, however NSW could miss its targets without further action from the Government and private sector.

The NSW Government has committed to reaching net zero emissions by 2050. It has also set interim targets of 50% emissions reduction by 2030 and 70% reduction by 2035, relative to 2005 levels.

At a glance

How NSW is tracking

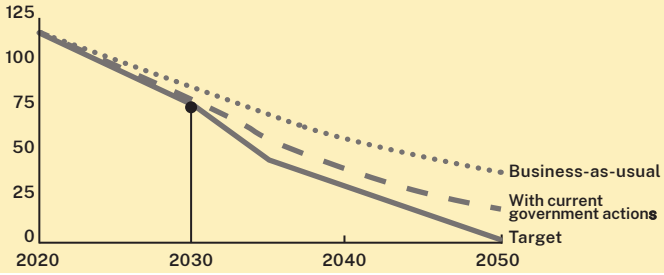
- The State's emissions reduction targets may not be achieved without significant additional effort. Based on modelling performed in 2023, existing policy and program settings are projected to reduce emissions by 44–50% by 2030. This suggests that more is required to achieve the 50% reduction target.
- Of the 15 NSW net zero initiatives discussed in the State of the Environment report, three are complete (Riverina battery project, Low Emissions Building Materials Program, and Decarbonising Infrastructure Delivery Policy) and 12 are underway.
- Transport is set to become the biggest greenhouse gas contributor by 2030, overtaking stationary energy (electricity generation) as NSW continues to decarbonise the electricity sector.

The big picture

Greenhouse gases will continue to accumulate in the atmosphere until 'net zero' is reached. Impacts of climate change, such as warming temperatures and more extreme weather, are projected to worsen over coming decades, highlighting the importance of early reduction of net greenhouse gas emissions where possible.

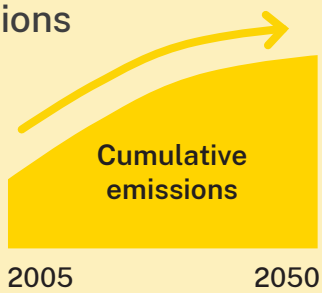
Emissions targets

NSW is projected to reduce emission rates to **44–50%** below baseline 2005 levels by 2030.



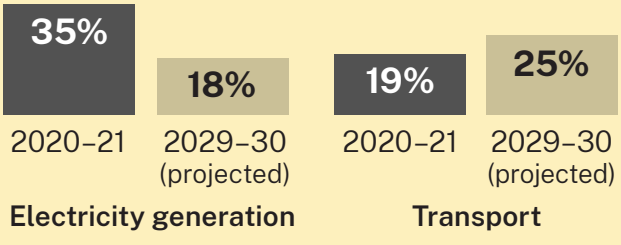
Cumulative emissions

Cumulative emissions (running total of emissions over time) are **still increasing** and will continue to increase until net zero emissions are achieved.



Transport

Transport is projected to become the **biggest contributor** of greenhouse gas emissions by 2030, overtaking electricity generation.



Energy consumption

Energy powers our world, and NSW is driving the shift to clean energy, towards a net zero emissions goal.

Energy consumption is a critical aspect of modern life. It drives industrial processes, transportation and daily household activities.

Energy continues to be the largest source of greenhouse gas emissions in NSW. About 80% of our total energy comes from non-renewable sources, such as coal and gas.

As our population continues to grow, industry electrifies and more people change to electric vehicles, it will become increasingly important to keep growing the renewable energy sector. This transition to renewable energy sources (such as wind and solar) for electricity generation, transport and industry will help NSW to achieve net zero emissions.

At a glance

How NSW is tracking

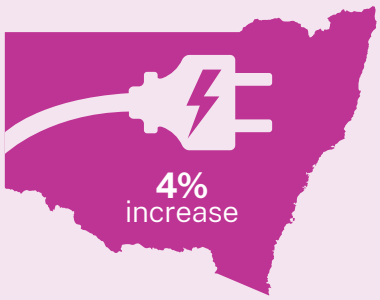
- Declining overall energy consumption between 2020–21 and 2021–22 was dominated by a decline in transport energy consumption. It remains to be seen whether this was a result of COVID-19 pandemic lockdowns. Transport's share of energy increased in 2022–23.
- In 2022–23, there was a major increase in electricity share delivered by renewable energy generation. It comprised about 34% of the State's electricity generation.
- Residential energy use per capita in NSW increased by 2% between 2020–21 and 2022–23.
- Annual demand for electricity from the NSW grid declined by more than 14,000 gigawatt hours, or about 18% of total electricity demand, between 2008 and 2023. This was primarily driven by energy efficiency measures and the strong uptake of behind-the-meter rooftop photovoltaics.

The big picture

Firmed renewables (such as solar backed up by batteries) have replaced coal as the most affordable source of new build energy.

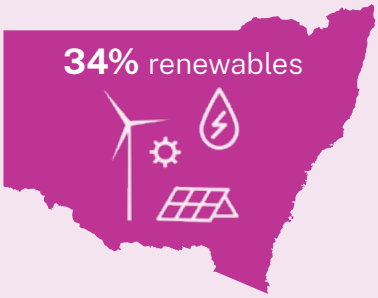
Electricity generation

Total NSW and ACT electricity generation **increased by 4%** between 2018–19 and 2022–23 as the population continued to grow.



Renewable energy

Renewable energy sources provided about **34%** of the State's electricity generation in 2022–23.



Energy consumption

NSW status and trend indicators

These indicators are used to assess the state of energy in NSW.

Indicator	Environmental status	Environmental trend	Information reliability
Total NSW non-renewable energy consumption	 POOR	 Getting better, Stable, Getting worse	 Good
Transport sector use of non-renewable energy	 POOR	 Getting better, Stable, Getting worse	 Good
Renewable electricity generation in NSW	 MODERATE	 Getting better, Stable, Getting worse	 Good
Per capita residential energy consumption	 MODERATE	 Getting better, Stable, Getting worse	 Good

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:**  Good  Reasonable  Limited

Indicator definitions

Total NSW non-renewable energy consumption – measures the total amount of energy generated from non-renewable sources, used in the State.

Transport sector use of non-renewable energy – measures the total amount of energy generated from non-renewable sources, used by the transport sector.

Renewable electricity generation in NSW – measures the total amount of electricity generated by renewable sources, including hydroelectric but excluding household solar hot water heating.

Per capita residential energy consumption – measures the total amount of residential energy consumed per person, including residential solar generation.

Transport

While greenhouse gas emissions from transport remain high due to the dominance of road transport, efforts to transition towards electric and active transport are gathering pace.

Transport is one of the biggest sources of greenhouse gas emissions in NSW, contributing to climate change and affecting the health of our environment and communities.

The high emissions are related to continued reliance on private vehicles, a preference for SUVs, and lack of electric freight vehicles.

At a glance

How NSW is tracking

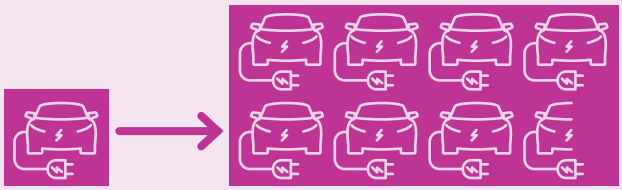
- In 2022, the transport sector accounted for 21% of all greenhouse gas emissions in NSW.
- In 2023, vehicles on NSW roads travelled 74.8 billion kilometres, a 12% increase since 2004.
- In the five years to June 2023, 62,116 native animal rescues by wildlife volunteers were due to motor vehicle collisions. Of these, 74% (45,803) died.
- There has been a 16% increase in motor vehicle registrations since 2016, which is twice the population growth rate over that period (7.7%).

The big picture

Sales of private electric vehicles are increasing rapidly in NSW, but this alone will not reduce greenhouse emissions fast enough. It is essential to continue improving access to public and active transport, and supporting the transition of public transport, planes and freight to renewable energy sources.

Electric vehicles

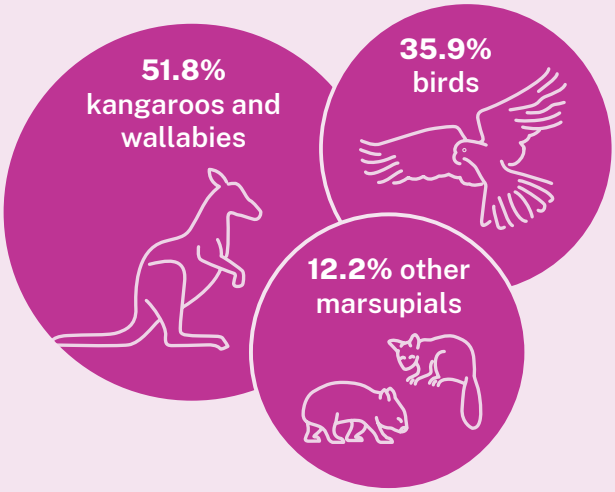
Electric vehicles made up **0.8%** of light vehicles on NSW roads (52,572 registered EVs) as at January 2024. This is **7.5 times more** than in 2021 (6,160 registered EVs).



2021 2024

Collisions with wildlife

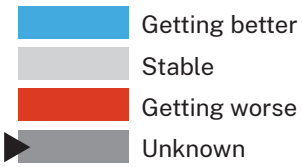
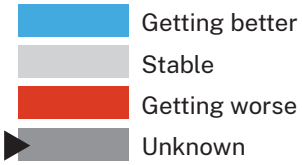
Native animal groups as a proportion of those rescued by wildlife volunteers after motor vehicle collisions.



Transport

NSW status and trend indicators

These indicators assess trends in our use of transport that have an impact on the environment.

Indicator	Environmental status	Environmental trend	Information reliability
Greenhouse gas emissions from transport	 POOR	 Getting better, Stable, Getting worse, Unknown	Good
Access to the 30-minute city	 MODERATE	 Getting better, Stable, Getting worse	Good
Access to regional day return	 GOOD	 Getting better, Stable, Getting worse	Good
Vehicle kilometres travelled	 POOR	 Getting better, Stable, Getting worse, Unknown	Good
Electric vehicle registrations in NSW	 POOR	 Getting better, Stable, Getting worse	Good

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** ■■■ Good ■■□ Reasonable ■□□ Limited

Indicator definitions

Access to the 30-minute city – measures the percentage of urban homes within 30 minutes of their nearest metropolitan centre via active or public transport. At around 61%, this is assessed as moderate.

Access to regional day return – measures the extent to which people can easily travel between regional centres using public and on-demand modes of transport within a day. With 90% of people in regional areas having access to these services in 2023, this indicator is assessed as good.

Water use

In a state with highly variable rainfall, equitable access to water depends on capturing it, storing it, and using it efficiently. Climate change and population growth are making this more difficult.

Access to clean, safe and reliable water is fundamental to the health and wellbeing of all people, communities, cultures, animals and plants. Effective management and monitoring of water resources is essential to balancing human demands and maintaining a healthy environment.

The NSW government is beginning to address systemic issues to improve recognition of Aboriginal rights and access to water by strengthening the role of Aboriginal people in planning, governance and decision-making.

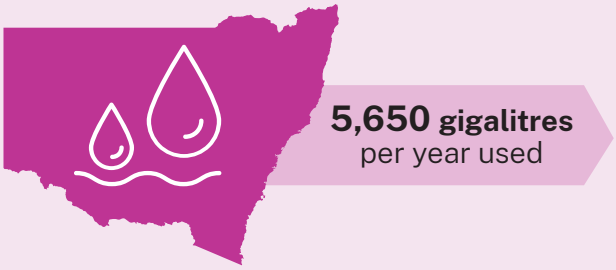
At a glance

How NSW is tracking

- Total water use in the State increased from about 3,322 gigalitres in 2019–20 to just over 5,820 gigalitres in 2021–22. This has been attributed to increased water availability and eased restrictions following good rainfall.
- Just over 4,000 gigalitres of environmental water were delivered to rivers and wetland habitats across NSW between 2021–22 and 2023–24. This is the most water in any three year period in the last decade. In 2023–24 alone 1,781 gigalitres were delivered.
- Annual per property residential water consumption has decreased since 2005–06. This indicates households have adopted measures to reduce their water use. The reduction per household was partially offset by our increasing population.
- All but one utility provided 100% of their population with water that met the guidelines for chemicals and contamination with *E. coli* (Inverell achieved 99.9%).

Total annual use

NSW uses an average of about **5,650 gigalitres** of water per year.



Household usage

Households use about **11%** of all the water used.

The big picture

Climate model projections indicate more severe droughts and floods, both of which harm water quality and availability. Smart water management will be critical for community resilience.

Water use

NSW status and trend indicators

These indicators relate to delivery of safe water for the environment, industry and households.

Indicator	Environmental status	Environmental trend	Information reliability
Proportion of water extraction covered by water sharing plans	GOOD	Stable	Good
Allocation of water for the environment	GOOD	Getting better	Reasonable
Proportion of the metropolitan and regional water supply meeting national guidelines	GOOD	Stable	Good
Minimising total and per person water use in metropolitan and regional centres	MODERATE	Getting better	Good
Water recycling – major utilities	MODERATE	Stable	Good
Water recycling – local water utilities	MODERATE	Getting better	Good

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** ■■■ Good ■■■ Reasonable ■■■ Limited

Indicator definitions

Proportion of water extraction covered by water sharing plans – measures progress to actively managing all water sources.

Allocation of water for the environment – measures the amount of water allocated through water sharing rules and water licences to sustain and improve the health of rivers, wetlands and floodplains.

Proportion of the metropolitan and regional water supply meeting national guidelines – measures drinking water against the Australian Drinking Water Guidelines.

Minimising total and per person water use in metropolitan and regional centres – measures the amount of residential water use by property.

Water recycling (both major utilities and local water utilities) – measures the amount of water for non-potable (not drinkable) uses.

Waste and recycling

Transitioning to a circular economy is more important than ever as our waste generation outpaces our capacity to manage its impacts on the environment, human health and the economy.

Waste can leak pollutants into the air, water and land, which then impacts plants and animals, and can lead to health concerns for people.

Waste generation is expected to continue growing. This is related to increases in population, economic growth, and disaster waste from more frequent extreme weather events due to climate change.

The circular economy means that rather than disposing of things after their use, materials are circulated again through reuse, repair, recycling and re-manufacture.

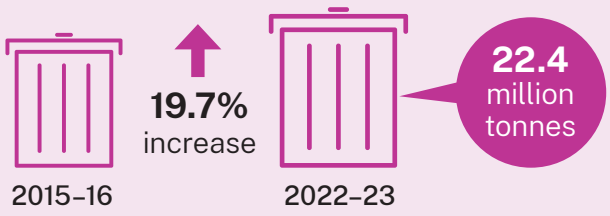
At a glance

How NSW is tracking

- Total waste generation in NSW rose from 18.7 million tonnes in 2015–16 to 22.4 million tonnes in 2022–23. This exceeded the pre-pandemic peak of 2018–19 by 72,000 tonnes. This was 1.4 million tonnes (7%) more than in 2021–22.
- The amount of littered items in NSW is decreasing. This shows a continued decline since a peak in 2018–19 and a decline of 51% from 2021–22. This suggests we are on track to meet the NSW Government's target of a 60% reduction by 2030.
- Plastic litter also continues to decrease, with a 55% decrease between 2021–22 and 2022–23, exceeding the NSW Government target of a 30% decline for this type of litter by 2025.
- Household waste is the most common form of waste illegally dumped (61.6%).
- NSW recycles only 13% of its annual plastic waste from a total of 850,000 tonnes.
- The NSW Container Deposit Scheme *Return and Earn* has collected 15.2 billion containers since the scheme started in 2017. More than 1.08 million tonnes of material has been recycled.
- There are challenges with legacy waste and ongoing illegal dumping in discrete Aboriginal communities due to inadequate waste and recycling services.

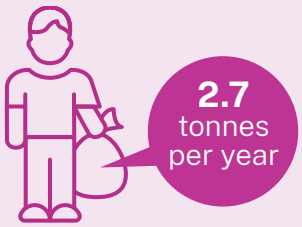
Total waste produced

Total waste generation in NSW increased by **19.7%** between 2015–16 and 2022–23 to **22.4 million tonnes**.



Waste per person

On average, we generated **2.7 tonnes** of waste per person in 2022–23. This was up from **2.4 tonnes** in 2015–16.



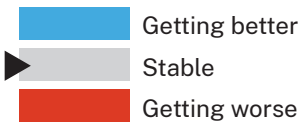
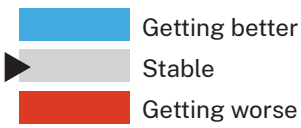
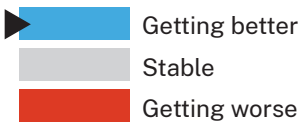
The big picture

Globally, the percentage of recovered materials being recycled, reused or repurposed is declining. Most waste is dumped or disposed of in landfill.

Waste and recycling

NSW status and trend indicators

These indicators assess how much waste is being produced, recycled and disposed of.

Indicator	Environmental status	Environmental trend	Information reliability
Total waste generation	 MODERATE	 Getting better, Stable, Getting worse	 Good
Per person waste generation	 MODERATE	 Getting better, Stable, Getting worse	 Good
Total solid waste disposal	 MODERATE	 Getting better, Stable, Getting worse	 Good
Total solid waste recycled	 MODERATE	 Getting better, Stable, Getting worse	 Good
Litter items per 1,000 m²	 GOOD	 Getting better, Stable, Getting worse	 Good

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:** Good Reasonable Limited

Indicator definitions

Total waste generation – measures the amount of waste generated in NSW.

Per person waste generation – measures the amount of waste generated in NSW per capita.

Total solid waste disposal – measures how much waste is sent to landfill.

Total solid waste recycled – measures how much waste is sent for recycling.

Litter items per 1,000m² – assesses the extent of litter and trends in litter reduction.

Contaminated sites

Contaminated sites have pollutants or hazardous materials that can put ecosystems and human health at risk.

Before European colonisation, the lands, waters and skies of what is now NSW were cared for by Aboriginal people in a way that nurtured and preserved the environment.

Since colonisation, contamination has resulted from industrial pollution, poor waste disposal and the use of persistent and toxic chemicals in domestic, agricultural and industrial settings.

A contaminated site is a place where the soil or groundwater has been polluted by harmful substances. The level of contaminants usually exceeds what is considered safe for people and the environment. Many contaminated sites are only identified for remediation when the use of the land changes, such as an apartment development on a former industrial site.

Aboriginal peoples are disproportionately impacted by contamination due to legacy contamination on discrete Aboriginal communities, and ongoing exposure to contaminants. The NSW Government is leading condition assessments in these communities to help plan future upgrades and repairs. This includes the assessment of asbestos and other contaminants. The condition assessments will help identify the infrastructure support and investment that communities need.

At a glance

How NSW is tracking

- In NSW during 2021–23 the number of regulated contaminated sites remained stable. The NSW Environment Protection Authority (EPA) regulated about 202 sites per year in that period.
- The cumulative number of sites requiring regulation by the EPA continued to increase, reaching 406 by 2023.
- The cumulative number of sites where EPA regulation was ended continued to increase, reaching a total of 203 remediated sites by 2023.
- In 2023, lead blood levels exceeded the national limit in 74% of Aboriginal children and 37% of non-Aboriginal children aged one to four years in Broken Hill.

The big picture

All Australian governments are working to implement the Industrial Chemicals Environmental Management Standard (IChEMS). It establishes nationally consistent standards for managing the import, manufacture, export, use, and disposal of, industrial chemicals.

Contamination notifications

The EPA was notified of **25 significantly contaminated sites** during 2021–23.

Remediated sites

The EPA assessed **18 sites as no longer significantly contaminated** during 2021–23.

Contaminated sites

A note on PFAS

- PFAS (per and polyfluoroalkyl substances) is a group of chemicals that have been widely used in industrial and consumer products since the 1950s.
- We take an integrated whole of government approach where several agencies work together to investigate and monitor PFAS in the environment.
- The EPA website has information on 51 sites in NSW where PFAS were likely used.
- The EPA provides precautionary dietary advice to the community through the NSW Technical Advisory Group (TAG), comprised of NSW Government agency technical expertise.

NSW status and trend indicators

These indicators relate to regulation by the NSW Environment Protection Authority (EPA) of land classified as 'significantly contaminated' under the *Contaminated Land Management Act 1997*.

Indicator	Environmental status	Environmental trend	Information reliability
Number of regulated contaminated sites	 **MODERATE**	 Getting better Stable Getting worse	 Good
Number of sites where the regulation has ended*	 **MODERATE**	 Getting better Stable Getting worse	 Good

Indicator table scales

- **Environmental status:** Good, moderate, poor, unknown
- **Environmental trend:** Getting worse, stable, getting better, unknown
- **Information reliability:**  Good  Reasonable  Limited

Indicator definitions

Number of regulated contaminated sites – These sites are determined to be 'significantly contaminated' and requiring oversight by the EPA.

Number of sites where the regulation has ended – These sites are assessed as being no longer significant enough to warrant regulation by the EPA.

Population and the environment

Population change and human behaviour are major drivers of environmental change and have widespread impacts.

Many issues facing the environment are caused or exacerbated by post-colonial human activities. How we extract and use resources, develop infrastructure and generate waste can all contribute to environmental impacts and affect our ability to produce food and access safe drinking water.

At a glance

How NSW is tracking

- By June 2023, of the 8.34 million people living in NSW, 5.1 million (61%) resided in Greater Sydney, 1.9 million (23%) in coastal areas and 1.3 million (16%) inland.
- Population growth is decoupling (separating) from some key environmental trends. While population is growing, energy use and greenhouse gas emissions are declining.
- Waste generation is outpacing population increase. Total waste generation rose from 18.7 million tonnes in 2015–16 to 22.4 million tonnes in 2022–23.
- The 'carrying capacity' for the NSW environment has not been estimated, so it is difficult to establish sustainable levels of consumption or output.

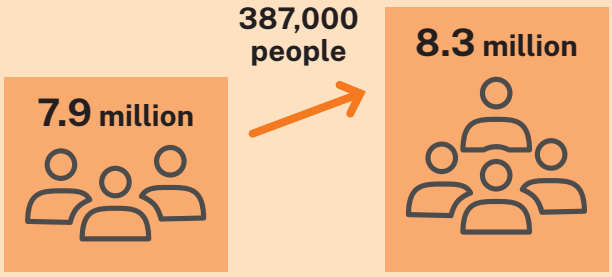
The big picture

Modern technologies enable more efficient use of resources such as water and energy, which helps to offset the environmental impacts of population change. However, these benefits are undermined if we continue to use more resources or generate more waste and emissions than nature can safely provide or absorb.

Population growth to 2023

The NSW population **grew** by **387,000 people** from **2018** to **2023**.

This was an increase of **4.8%** – **7.9 million** people in 2018 / **8.3 million** people in 2023.



Population growth – projected

NSW's population is expected to reach **10.1 million people** by **2041**.

Economic activity and the environment

New approaches to economic management consider the health of our natural environment.

Our economy depends on natural resources to convert into products, to dispose of waste and to supply the essentials for life: food, water and air.

Highly nature-dependent industries, such as construction, agriculture and food, could be significantly disrupted if ecosystem services are reduced or lost.

Economic activity can lead to substantial negative impacts on the environment and human health due to the ways we produce goods and services and dispose of waste.

At a glance

How NSW is tracking

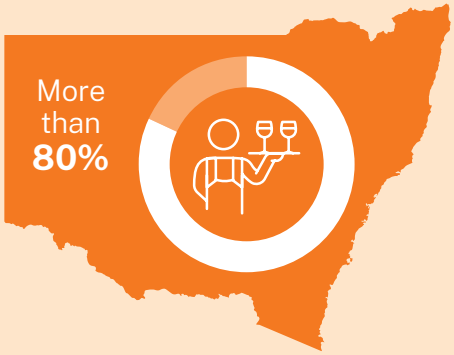
- Since 1990, the NSW economy has grown on average by 2.4% a year (measured by gross state product). It has shifted over time from a resource-intensive industry base to being 80% services-based in 2022–23.
- Economic growth is decoupling (separating) from some key environmental trends. Gross state product is growing, while energy consumption and greenhouse gas emissions are declining.
- Current economic approaches in NSW, such as cost-benefit analysis, taxes and offsets, try and balance economic and environmental considerations.
- New economic approaches such as natural capital accounting and circular economy initiatives provide opportunities to reduce environmental impacts of economic development.

The big picture

New sustainability reporting requirements (such as climate-related and nature-related financial disclosures) may provide opportunities for more comprehensive reporting on climate and biodiversity risks, opportunities and impacts.

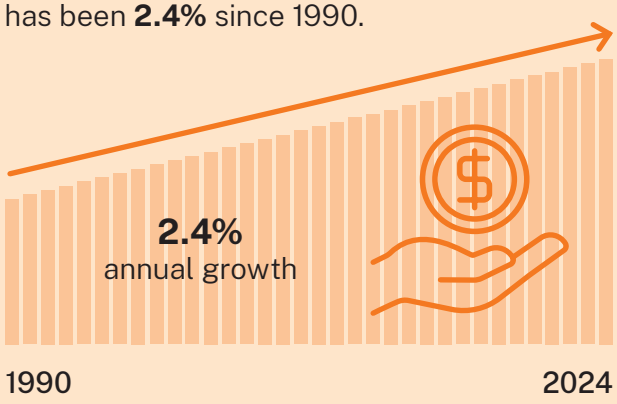
Key economic activity

More than **80%** of the NSW economy is services-based.



Annual growth

Gross state product average annual growth has been **2.4%** since 1990.



Design
Wendy Farley, Anthouse Communications

Photos

Front cover
Yuin nation, Beach at Beecroft Peninsula
Photo: Silvan Bluett/DPIE

Opposite Contents
Yuin nation, New Holland honeyeater, Aislings Beach
Photo: Mick Bettamin/DPI

Opposite Voice of Country
Worimi nation, Myall Lakes National Park
Photo: Mick Bettamin/DPI

Opposite Health of Country
Wailwan nation, Two waterways meet, Macquarie Marshes Nature Reserve
Photo: John Spencer/DCCEEW

Opposite imprint page
Biripi nation, Forest canopy from above, Coopernook State Forest.
Photo: Brent Mail/EPA

Back cover
Bundjalung nation, Zippered – kangaroo tracks on the Clarence flood plain backswamp.
Special conditions apply to the use of this image.
Photo: Stuart Murphy/EPA

Banner artwork and images

The banner on each page has a re-scaled monochrome version of the image used in the full report, accompanied by the topic artwork to the left of the title.

The topic artworks were created by Gerard Black, Worimi artist and owner of Baiyami Art.

Details of the images used as background for the banners are listed on the 'Photos and artistic credits page' of the State of the Environment report.

The design's overarching intent is to promote a greater sense of connection. It is hoped that the viewer can look at the art and transport themselves into the places where the art takes them – whether to the forests or down in the ocean or looking up into the sky to the birds. The aim is for the art to bring the viewer back to that connection level – how we connect to the world around us – the real underlying connection that we should all have.

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