



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.

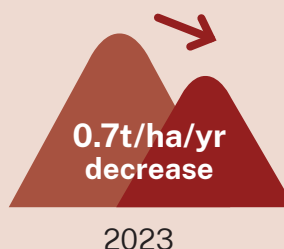
The big picture

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.

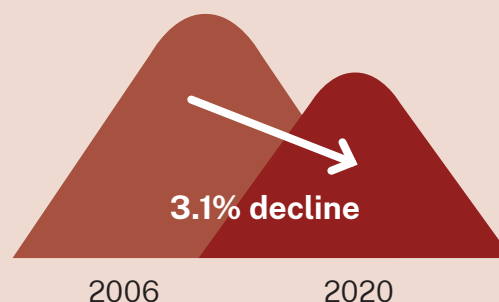
Current rate



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.




















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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.