Australian Government
Department of Agriculture, Fisheries and Forestry

Key facts on Australia's soil

Introduction

Soil is one of Australia's most valuable natural assets, underpinning our food systems, economy, environment and way of life. The soil in Australian landscapes is ancient and highly weathered (McKenzie et al. 2004). About half of Australia's land area is used for agriculture, all of it dependent on healthy soil to produce food, fibre and natural resources that support communities at home and abroad (ABARES 2026). The combined community, economic and environmental value of soil makes its protection and sustainable management essential, not just for agriculture, but for Australia's prosperity, sustainability and wellbeing (Cresswell et al. 2021).

Soil health decline can create risks and challenges for agricultural production and the environment. Key degradation processes include erosion, acidification, salinisation, sodification, soil carbon loss, and contamination, and these pressures can worsen during drought, fire and floods (SSA 2019, Cresswell 2021). National actions in partnership with state and territory governments, industry and other agencies to address these risks include the National Soil Strategy 2021 to 2041 (the strategy) and the National Soil Action Plan 2023 to 2028 (NSAP).

The strategy is Australia's first national policy on soil which sets out how Australia will value, manage and improve soil. The strategy with goals for soil health, innovation, stewardship and strengthening soil knowledge and capability is being implemented through the NSAP on 4 priority actions. Implementation of the strategy and the NSAP is overseen by the National Soil Strategy Implementation Steering Committee (NSSISC) – comprising representatives from the Australian Government, state and territory governments, industry and other agencies.

This document is for information only and highlights key facts, resources and references on Australia's soil sourced from scientific, industry and government information.

Australia's soil at a glance

- Australia's soil provides food for about 100 million people nationally and around the world.
- Agricultural soil plays a critical role in emissions reduction and the global carbon cycle.
- Farmers are working to improve soil health, which agriculture depends upon.
- Soil supports Australia's unique natural landscape, the economy and the environment.
- Soil can be lost quickly by erosion or poor management and replacement is very slow.

Soils value

- Farming uses more than half of Australia's land – about 439 million hectares (ABARES 2026).
- Australia's economy depends heavily on soil. Farm production is expected to be worth $98.3 billion in 2026–27, or $104.5 billion when fisheries and forestry are included (ABARES 2026). All of this relies on healthy soil, making soil one of Australia's most valuable natural assets, underpinning environmental, community and economic wellbeing (Cresswell et al. 2021).
- Globally, soil is the foundation of resilient food systems, producing an estimated 95% of food consumed (FAO 2015). Applying this estimate to Australia's forecast agricultural production value, soil is expected to contribute around $93.4 billion to the Australian economy in 2026–27 (ABARES 2026).
- Australian agriculture helps feed the world. About 75 to 100 million people globally rely on food produced in Australia (CSIRO 2023, Nelson et al. 2025) from around 87,800 agricultural businesses (ABS 2023) and about 134,000 farms (ABARES 2026).

Soil and sustainable farming

- Natural Resource Management (NRM) farming practices that protect and improve soil health, productivity and reduce net emissions are increasingly being adopted across Australia (ABARES 2025, ABARES 2026; SSA 2022). From a survey of broadacre and dairy farms (Ryder et al. 2025):
  - 45% keep crop stubble on paddocks (69% for cropping farms)
  - 57% conduct soil testing
  - 46% reduced fertiliser use
  - 39% reduced pesticides
  - 42% of dry livestock farms use rotational grazing.
  - 80% of cropping farms practice no tillage (ABARES 2023)
- Farmers using NRM or sustainable agricultural practices are improving soil health by protecting water and nutrient rich topsoil for agriculture and reducing erosion (Ryder et al. 2025).
- The loss of 1 mm of topsoil per hectare represents approximately 10 t of soil, 100 kg of organic carbon and 10 kg nitrogen (NSW Drought Hub 2025).
- The production rate of new agricultural soil is a very slow process with estimates of 114 mm/1,000 years (Stockman et al. 2014) to as low as 0.3 to 0.4 mm/1,000 years (ANU 2026).
- NRM and sustainable farming activities have been shown to significantly improve soil health and build resilience to disaster risks of flood, fire and drought (Kabato 2025).
- Australia relies heavily on imported inorganic fertilisers for agriculture, creating domestic food production, soil health, environment and supply chain risks (Alom et al. 2025, CSIRO 2026, Fertiliser Australia 2026).
- The department recognises that the Middle East regional conflict is impacting the fuel and fertiliser supply across Australia. The Australian Government is working with industry through

the Fertiliser Supply Working Group and the Fuel and Fertiliser Security Facility to address risks and issues with advice and information on immediate response measures and longer-term policies designed to protect Australia from global supply disruptions.

Soil and biodiversity

- Soil is alive. It has a range of structural types, important chemicals, nutrients, water and contains an enormous range of plants, animals and microscopic organisms (GSP 2020).
- Healthy soil provides clean water, food, biodiversity, energy, climate regulation and other essential ecosystem services that support people and nature (Kibblewhite et al. 2015; Robinson et al. 2024; McBratney et al. 2014).
- Australia's soil directly supports the economy. The economic contribution of soil was about $930 billion per year in 2017 (SSA 2019, McBratney 2017). Adjusted for inflation, the estimated amount was $1.2 trillion per year in 2025.
- Soil is one of the most diverse habitats on Earth. Around 25% of all species live in the soil, which is a vast biodiversity habitat critically important to the health and wellbeing of people and the ecosystem (DAWE 2021, DEH 2023, Cresswell 2021).
- A tablespoon of healthy soil contains more living organisms than there are people on Earth. A single gram can hold billions of microbes (FAO 2015, GSP 2020).

Soil and climate

- Soil is the largest land-based store of organic carbon, holding 2 to 3 times more carbon than the atmosphere and all plants combined (Jang et al. 2023).
- The top 30 cm of Australian soils contains an estimated 35.9 gigatonnes (1Gt = 1 billion tonnes) of soil organic carbon (Rossel et al. 2019b). This represents approximately 3.5% of the total carbon stock in the upper 30 cm of soil worldwide, making Australian soil an important contributor to the global carbon cycle (Rossel et al. 2014).
- Australian agricultural soils provide opportunities for carbon farming and nature repair projects, which help reduce emissions, store carbon and restore biodiversity (CER 2025).

Soil resources

Case studies and more facts on Australia's soil health and sustainable agriculture are available at:

- Soils for Life
- NRM Regions Australia
- Clean Energy Regulator
- Soil Science Australia
- Meat and Livestock Australia
- Grains Research Development Corporation

- Clean Energy Financing Corporation
- CSIRO
- Fertiliser Australia
- National Farmers Federation
- Soil CRC.

Regional Soil Coordinators and Sustainable Agricultural Facilitators are knowledgeable contacts with resources and networks located across Australia for further information on Australia's soils.

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Acknowledgement of Country

We acknowledge the continuous connection of First Nations Traditional Owners and Custodians to the lands, seas and waters of Australia. We recognise their care for and cultivation of Country. We pay respect to Elders past and present, and recognise their knowledge and contribution to the productivity, innovation and sustainability of Australia's agriculture, fisheries and forestry industries.