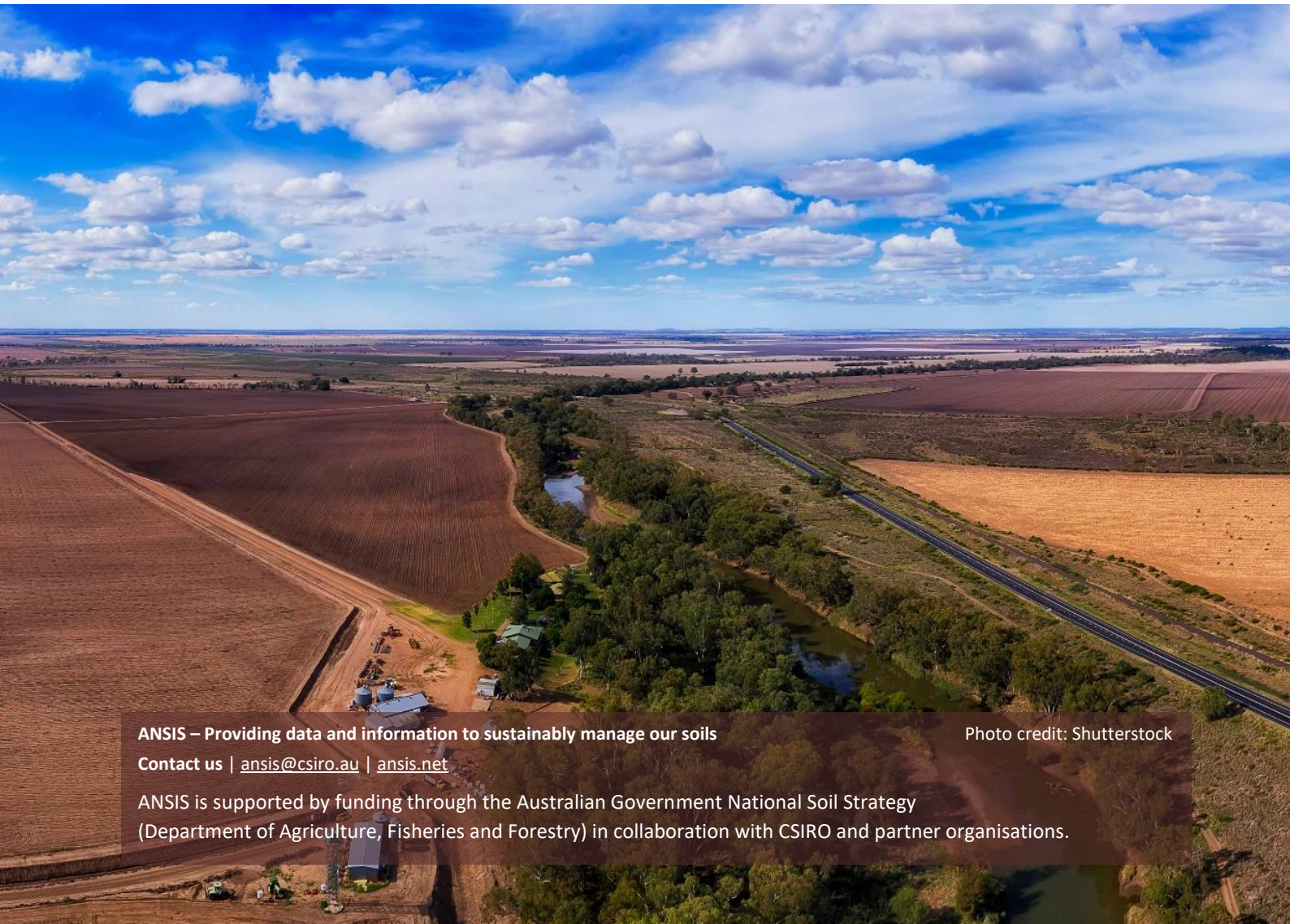


ANSIS use case: Soil state and trend assessment

Use cases are examples that show the potential benefits of the Australian National Soil Information System (ANSIS) by practically demonstrating the value of ANSIS. The use cases show how ANSIS could support a range of users making decisions regarding the sustainable management of Australia's valued soil resources into the future.

Soil data for natural resource management

Soil is one of our most valuable natural assets. It regulates climate, grows our food and fibre, supports infrastructure, and underpins biodiversity and natural habitat. Land use and management influence the state of our soil, and its ability to support different ecosystems may change. Understanding the extent and trend of this change helps guide future management decisions to protect and improve our soil.



ANSIS – Providing data and information to sustainably manage our soils

Contact us | ansis@csiro.au | ansis.net

Photo credit: Shutterstock

ANSIS is supported by funding through the Australian Government National Soil Strategy (Department of Agriculture, Fisheries and Forestry) in collaboration with CSIRO and partner organisations.

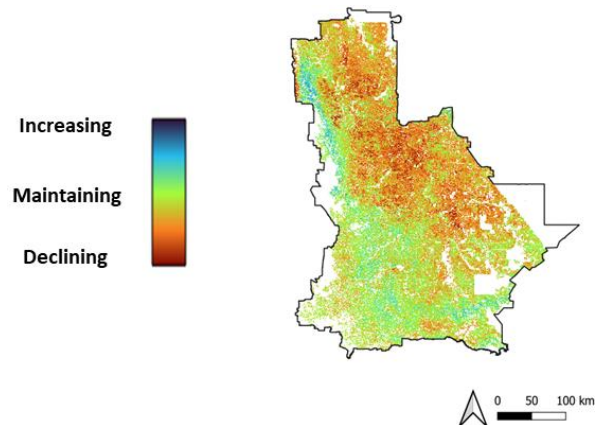
How ANSIS could support soil state and trend assessments

Understanding the impact of changes to soil properties over time requires an assessment framework and consistent, harmonised historic and current soil data. This use case developed an assessment framework that: describes the impact of soil change on the potential delivery of multiple ecosystem services; identifies key soil functions and measures; defines how measurements are given a condition score for different services; and suggests how these condition scores can be aggregated to provide a holistic condition assessment across multiple ecosystem services.

In this use case ANSIS enabled access to multiple sources of soil data, ensuring the best available and most up to date information was used to model the state and trend of soil properties across Australia. A trend assessment was then undertaken at a regional level to understand soil changes, identifying which soils were declining, maintaining, or improving condition for different agricultural land uses, and which assessed soil properties were of most concern.

How the soil information product could be used

State and trend assessments could be used to support Natural Resource Management groups to identify key degradation issues and prioritise areas for management and investment.



An example map showing where soil condition is maintaining, increasing or declining. Note that use cases are examples of potential use only.

This is just one example of how ANSIS could support the development of soil information products at regional levels. Other examples may include assessment of soil to assist with the development of policy and programs at local, regional and national levels, for investment prioritisation by financial institutions, regional and national reporting such as State of the Environment, natural capital accounting, and input to ecosystem condition maps.

Supporting assessment of soil change: Example narrative

A local NRM group is wanting to assess the current condition of all the natural assets within their region, to assist in their planning and funding allocation, along with natural capital accounting.

The NRM group has limited soil data to conduct the assessment and uses ANSIS to provide verified soil data dating back to the 1960s within their region.

With expert support, the NRM group apply a framework to regional data accessed through ANSIS to estimate how much each soil asset is changing.

The NRM group plan to directly measure soil properties within their region and make the data available through ANSIS for the benefit of other users. This monitoring will also allow them to track the success of their investments.

The NRM group begins strategic planning to target areas, assets and services needing investment within their region.

The results showed that 50% of their soils were in declining condition, 30% were maintaining and 20% were increasing for agricultural production.