



# Improving land management practices

Soils are important to the natural resource base, to agricultural productivity and to the delivery of a wide range of ecosystem services needed by the Australian community. Farmers manage more than sixty per cent of the Australian landscape, and the management practices they choose have a significant impact on air, land and water resources.

The condition of the natural resource base affects the quality of ecosystem services available to the community. Wind and water erosion, soil carbon rundown and soil acidification processes reduce the land's capacity to provide clean air and water and productive soils, biodiversity protection, maintain the resilience of the landscape to climate change and produce food and fibre.

Recognising the importance of these issues, Caring for our Country, the Australian government's natural resources management initiative, is funding projects that provide information to farmers about the land management practices needed to conserve and enhance the long term capacity of the nation's resource base, and contribute to maintaining a healthy environment.

Caring for our Country is aiming to assist 42 000 farmers to improve practices across 70 million hectares of agricultural land by 2013. Trends in the adoption of practices that reduce the risk of soil acidification, soil loss through wind and water erosion and increase

the carbon content of soils are being tracked for over 150 000 farms across Australia using the Australian Bureau of Statistics' Agricultural Resources Management Survey.



*No-till farming, Young, NSW*

Practices monitored include cultivation, stubble management and soil pH management for cropping industries, soil pH management and inter row cover for horticulture industries, ground cover management and soil pH management in the dairy industry, and ground cover management in other grazing industries (meat cattle/sheep).

Emphasis is being given to practices that affect the proportion of ground cover retained, because this factor has a significant impact on the amount of soil redistributed or lost through wind and water erosion, and on the biomass which could contribute to soil carbon storage.

Methods being used to manage biodiversity assets such as native vegetation on farms are also being monitored.

## Tracking progress

A number of maps based on results from the 2007-08 survey have been produced to provide a baseline.

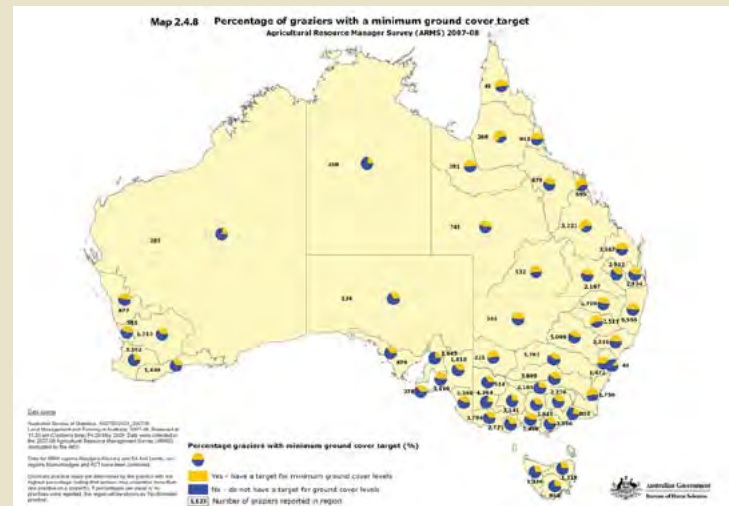
Results from the biennial Agricultural Resources Management Survey will be used to track changes in management practices at the natural resources management region level. Rates of change for some practices in Australia's cropping industries over the last 12 years are illustrated on the right.

Further research is planned to investigate factors affecting the rates of land management practice change at regional levels.

## How will we know whether these practice changes are improving soil condition?

Direct monitoring of wind and water erosion, soil carbon and acidity is needed to detect changes in soil condition and to help identify whether these are due to practice improvements, climate or some other factor. Work is being done to develop methods for monitoring and reporting on:

- » wind erosion: view fact sheet and reports on [www.nrm.gov.au](http://www.nrm.gov.au) website under 'publications and resources'
- » water erosion: view report *Evaluation of Tolerable Erosion Rates and Time to Critical Topsoil Loss in Australia* on [www.nrm.gov.au](http://www.nrm.gov.au) website under 'publications and resources'
- » soil carbon and soil acidity: view report *Building a foundation for soil condition assessment* on [www.nrm.gov.au](http://www.nrm.gov.au) website under 'publications and resources'
- » ground cover for modelling wind and water erosion, soil carbon and acidity: view fact sheet on [www.nrm.gov.au](http://www.nrm.gov.au) under 'publications and resources'.



Map 2.4.8: Percentage of graziers with a minimum ground cover target. A3 size map available on [www.nrm.gov.au](http://www.nrm.gov.au) website under the Business Plan 2010-11 Sustainable Practices section.

