



NRM Plan

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Sustainable Agriculture

Soils in the Northern and Yorke NRM Region

Brief description of the N&Y NRM regional soils

The coastal plain soils are shallow calcrete/loams over unconsolidated calcareous deposits and dune sand. Subsoils are moderately saline.

Yorke Peninsula is a gently undulating plain with rises and hills. Soils are largely loam over clay, shallow calcrete or calcareous loams with some dune fields. Sub soil salinity, sodicity and alkalinity restrict root growth.

The hills and valleys in the northern Mt Lofty and southern Flinders Ranges have neutral loamy soils over red clay. Subsoil salinity, alkalinity, sodicity and boron are widespread.

Why healthy soils are important?

Soil is a critical asset for maintaining agricultural productivity and biodiversity. Soil determines where different crops can be grown and the natural distribution of native plants. Soil provides the habitat for native plants and animals, including invertebrates and microbial organisms. These organisms provide services such as recycling nutrients and binding soil particles.

Degradation of the soil results in poor plant establishment and growth which leads to:

- Reduced productivity in crops and pasture
- Increased susceptibility to weeds
- Increased susceptibility to wind and water erosion
- Loss of native vegetation and habitat.





What are the threats to maintaining the soil resource in good condition?

Soil erosion is a natural process but clearance of native vegetation and inappropriate management including excessive cultivation has increased the natural rate of erosion by water and wind. In the N&Y NRM region, of all land used for agriculture, approximately 30% is susceptible to water erosion and 10% to wind erosion.

Management practices affecting erosion potential include occurrence, intensity and timing of tillage and quantity and nature of surface cover. Soil cover can be removed by stubble burning; overgrazing by stock and pest animals and crop failure. Inadequate cover and soil disturbance will result in erosion when heavy prolonged rains and strong winds occur.

Acidic soils also occur naturally in the region but acidification can be accelerated by the use of nitrogen fertilisers and removal of alkaline properties in the soil. Salt is also a natural feature of the region's landscape. Secondary salinity is occurring due to changes the water balance and groundwater levels i.e. water table rise (known as dryland salinity).

What can you do to help manage soil in a more sustainable manner?

Monitoring

Part of the region's soil types and soil characteristics have been mapped and described, with land condition monitored by the Department of Environment and Natural Resources (DENR). Included in the monitoring is a land manager survey of management practices, knowledge and attitudes.

Continuation of DENR participation in this survey is vital to improve the knowledge base and overall soil management in the region. The extension of soil mapping in the northern part of the N&Y NRM region will improve the ability to manage the region's soil resources.

Planning

The N&Y NRM Board and DWLBC have developed and will develop further Salinity Management Plans where applicable.

