



ACARP matters because it

identifies sustainable end uses for mined land

Over the past 20 years the Australian coal industry has invested many millions of dollars in a broad range of rehabilitation research. The focus of open cut mine rehabilitation has evolved from initial work on stabilising the landform through a process of understanding the relationship between the properties of constructed soils and researching and planning of appropriate plant species, to exploring the development of native ecosystems and other sustainable end uses for mined land.

Industry target

- Stable post-mining landforms
- Sustainable revegetation of mined land and end uses for mined land
- Cost-effective rehabilitation techniques for mine closure and reclamation
- Understanding the effect of mine subsidence on crop yield, critical soil factors affecting plant growth, native vegetation and agricultural environments
- Understanding and determining the carbon content of mined soils
- Predicting the impact of mine subsidence on swamps
- Understanding of the processes required to recover the productivity of cropping soils after mining.

Industry investment

- ACARP: \$9.1 million plus individual mining companies and mine sites, universities and other research organisations
- More than 45 projects over 20 years.



Rehabilitation work at Norwich Park mine.



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Results

- Development of principles and practices for achieving stable post-mining landforms based on erosion models and landscape models
- Understanding of the properties of 'constructed' soils (recontoured spoil)
- Identification of around 60 native groundcover, shrub and tree species suitable for revegetating mined land
- Development of an annotated bibliographic database of existing published and 'grey' literature on coal mine rehabilitation related research in Queensland and New South Wales
- Development of criteria required to return mined land to grazing and identification of key risks to successful post-mining land use
- Confirmation that remotely sensed data are an invaluable tool in monitoring mine subsidence on surface environments
- Confirmation that unmanned aerial vehicles are useful at monitoring changes in surface environments due to mine subsidence.

Return on investment

- Protection of 'licence to operate' and improved community relations
- Refinement of final landform planning
- Refinement of rehabilitation methods for return of native ecosystems and grazing pastures.