

Establishing Self-sustaining Ecological Mine Rehabilitation that Achieves Recognised Ecological Communities

ACARP

umwelt
Environmental & Social
Consultants



Australian Coal Research Limited (ACARP) has entered into a Research and Development agreement with Umwelt to fund the investigation of ecological mine rehabilitation success, and to prepare guidance and criteria to improve standards and outcomes, and thus facilitate increased valuing for biodiversity offsetting by Government.

Background

Regulatory agencies are increasingly requiring proponents to demonstrate that mine rehabilitation reaches a self-sustaining level of ecological function.

The use of ecological rehabilitation as an offset method has been greatly restricted due to the knowledge gap regarding the likelihood of successful ecological rehabilitation. Nonetheless, the coal mining industry has made substantial progress in recent years, and in some jurisdictions (such as NSW, QLD and WA) ecological rehabilitation can contribute to biodiversity offset requirements for mining projects.

It is understood that under Commonwealth legislation there could be opportunity for the formal acceptance of ecological rehabilitation to meet biodiversity offsetting requirements. To date there has been little overarching material published that demonstrates whether long-term function of coal mine rehabilitation is being achieved, or can be achieved, in relation to establishing self-sustaining recognised ecological communities and threatened ecological communities.

Rationale and Significance

This project aligns with two of the ACARP 2017 research priorities:

- Sustainability of mine rehabilitation, in relation to biodiversity reinstatement; and
- Revegetation including species selection and improved methods for the introduction of recalcitrant and/or high interest native species in mine rehabilitation.

The coal mining industry has made significant improvements in this field, however a comprehensive review of the situation is required, together with specific guidance on improvements in objectives, criteria and monitoring, to ensure that mining can undertake best-practice ecological rehabilitation, and to encourage government to appropriately recognise the ecological value of such works.

This project is also likely to also complement NSW Government initiatives under the *Biodiversity Conservation Act 2016*, as well as opportunities in other jurisdictions.

OBJECTIVES



Can Mine Rehabilitation lead to **RECOGNISABLE & SELF-SUSTAINABLE** ecological communities?



Can Mine Rehabilitation support **HABITAT** for **THREATENED SPECIES**?



ESTABLISH PRINCIPLES :

- Rehabilitation objectives
- Performance criteria
- Completion criteria



PROVIDE GUIDANCE FOR INDUSTRY:

- Benchmark sites and standards for successional stage criteria
- Monitoring program to guide progressive ecological rehabilitation success or adaptive management

METHODS

1

Review and analyse current ecological rehabilitation practices and monitoring data

MARCH-AUGUST 2018

2

Assess rehabilitation sites:

- Ecosystem Function
- Biodiversity Assessment Method (BAM)
- LiDAR and Aerial Photography

NOVEMBER 2018

3

Report on:

- National practices, successes and lessons
- Analyses of case studies
- Applicability of NSW Biodiversity Assessment Method
- Principles, guidelines and criteria

MAY 2019

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GLENCORE

