Rehabilitation services

capability statement

Dr Grant Wells
Manager, Botany

Phoenix provides a comprehensive suite of rehabilitation services for terrestrial ecosystems, from baseline studies and revegetation design to compliance monitoring and performance audits.

Our comprehensive and practical framework has accomplished successful rehabilitation outcomes for numerous projects across Western Australia.

Our rehabilitation team's capability stems from a strong research background in the restoration of natural systems, coupled with extensive practical implementation of rehabilitation programs.

ABOUT ECOSYSTEM REHABILIATION

Land rehabilitation is a standard requirement of many projects and activities, in particular when the projects or activities cease, although progressive rehabilitation is also often required.

This includes, for example, mine closure under the *Mining Act 1978*, native vegetation clearing permits and assessments under under the *Environmental Protection Act 1986*, and urban development projects.

Returning vegetation, biodiversity and functional ecosystems is a critical component of land rehabilitation.

WA is recognised internationally for its diversity of native plants and ecosystems, many of which are locally endemic. Successful rehabilitation of WA ecosystems therefore requires site-specific data and approaches to reinstate the local environmental values of disturbed areas.

INDUSTRY ISSUES

WA's vast size coupled with ecosystem diversity, often limited baseline information and site-specific habitat variation can make rehabilitation projects challenging. Rehabilitation success in WA's arid regions is often hampered by thin, poor quality topsoils low in nutrients and native seed banks. Climate variability adds to this.

Rehabilitation plans often include unrealistic or ill-defined objectives and completion criteria for a site, resulting in low chance of rehabilitation success and uncertainty for proponents regarding rehabilitation costs and final signoff.

Other common issues are that baseline data is often not collected and adequately considered in rehabilitation programs, and rehabilitation progress is not well documented, making it difficult to evaluate the efficacy of the works conducted.

PHOENIX
ENVIRONMENTAL SCIENCES

Phoenix Environmental Sciences offers a broad range of complementary biological and environmental management services. Our team strikes the right balance of scientific credibility, practical application and business sense.

OUR SOLUTION

We understand well the challenges to successful rehabilitation in WA. Our rehabilitation framework, developed over several years is sufficiently adaptable to manage these challenges. It builds in the principles of continuous improvement and adaptive management through good record keeping and data feedback to identify required program improvements.

Despite best practice some rehabilitation projects can still fail due to forces beyond an operator's control. Our rehabilitation framework is sufficiently transparent to satisfy regulators that best efforts have been applied.

Monitoring of natural communities on a rotating basis provides a broader suite of analogues to better capture the floristic diversity of a site providing a more realistic and achievable benchmark than annual monitoring of only a few analogues. Limited analogue data can 'set the bar' too high.

We establish completion criteria as part of early rehabilitation planning, based on baseline data. These set targets and guide the rehabilitation program from the outset rather than being retrofitted to ad-hoc rehabilitation processes conducted with no clear vision and end point.

SERVICES

- Revegetation design/species selection/derivation of seed mixes and sowing rates
- Development of quantitative key performance indicators (KPIs) targeted at specified completion criteria
- Evaluation of rehabilitation success
- Quantified broadcast seed/tubestock success and topsoil seed bank recruitment
- Propagation research including seed pre-sowing treatments and vegetative division for tubestock
- Evaluation of rehabilitated community self-sustainability utilising seed bank dynamics and species fecundity measures
- Independent reviews of existing survey designs to define limitations and offer recommendations for improvements

CONTACT

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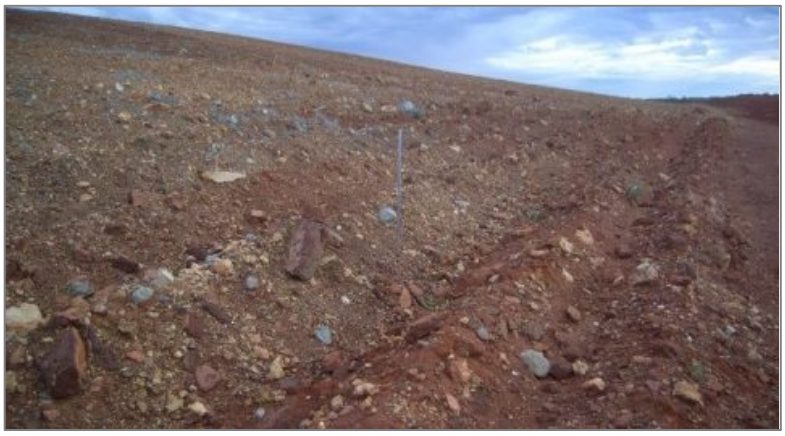

Rehabilitation site immediately following seeding

Revegetated community at year 3 (site above)

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