

**“Our industry is absolutely committed to environmental excellence”.**



**From the Chief Executive**

Western Australia’s modern resources sector is proud of its global reputation for environmental excellence.

New technologies, better processes and, most importantly, a deep appreciation of the need for environmental sustainability, mean that more than ever, we are achieving economic and social development without sacrificing the environment.

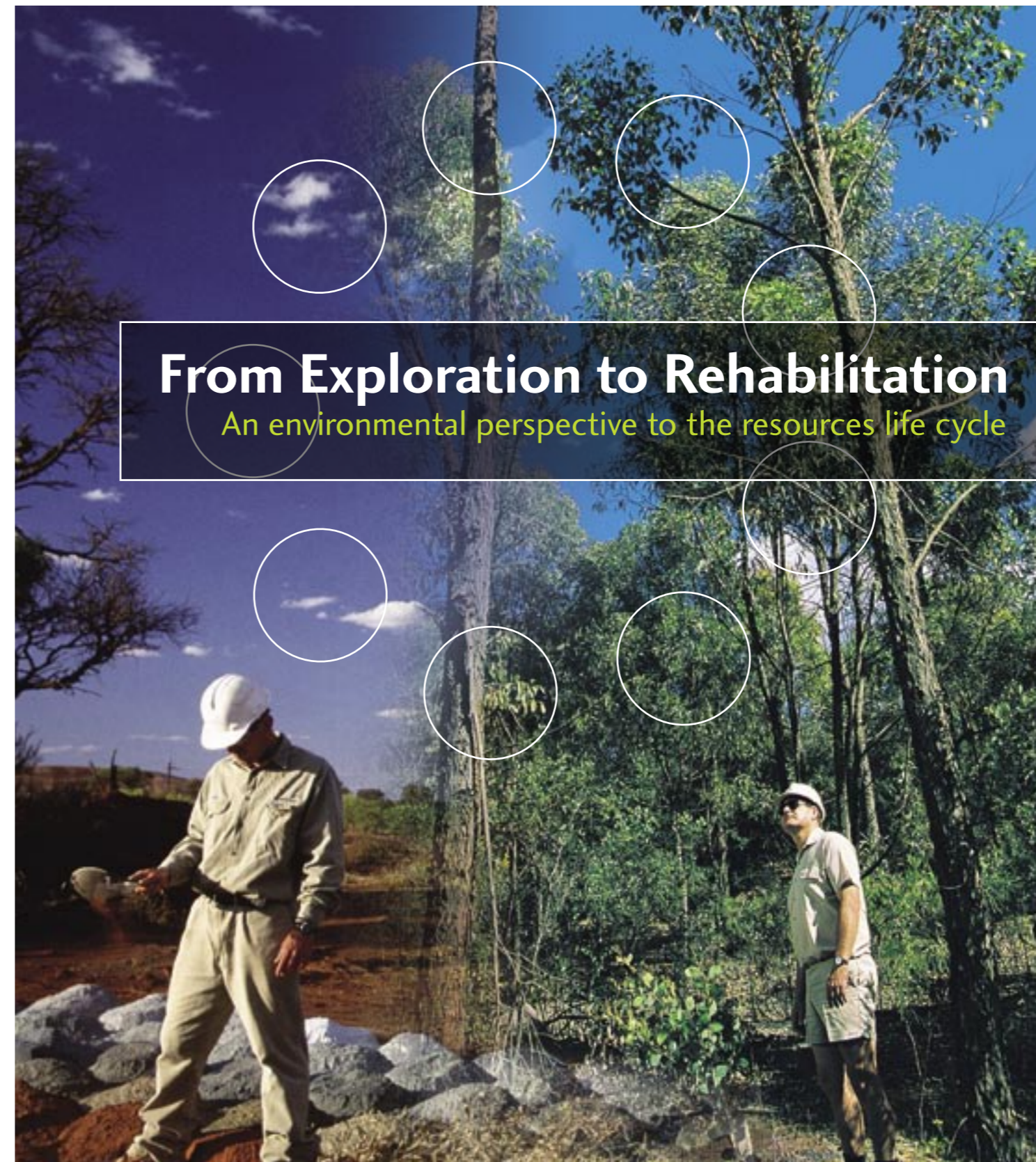
The contribution of the resources sector to the advancement of environmental practice is sometimes not fully appreciated. The industry today now employs more environmental specialists than any other sector, and it devotes significant resources to environmental research, planning and management.

The resources sector has been a leader in responding to the sustainability agenda—the idea that development should occur in a way that enhances economic, environmental and social goals. Sustainable development is more than just environmental protection measures; it involves putting land use planning and biodiversity conservation at the heart of the resources decision-making process.

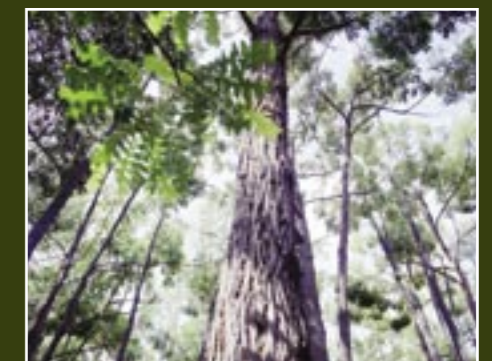
This booklet has been designed to explain the stages of the resources life cycle and how the industry integrates environmental management into each of them.

We hope it will provide greater understanding about the primacy of environmental considerations and the solutions being developed to achieve net-positive environmental gains.

**Tim Shanahan**  
Chief Executive



**From Exploration to Rehabilitation**  
An environmental perspective to the resources life cycle



# The resources cycle

Environmental considerations are paramount at each stage of the resources cycle

**Exploration**  
Companies work carefully to minimise the impact of exploration and are required to rehabilitate the areas explored. Geologists use satellite imagery and computer modeling to survey land, without making any environmental impact, before they decide where to explore. Drilling programs use precise sampling to avoid affecting large areas of vegetation.

**Advanced exploration**  
Even at the advanced exploration stage, environmental disturbance is minimal. Strict rules about clearing vegetation minimise the impact of exploration activities.

**Planning and Permitting**  
All operations, including progressive rehabilitation and closure options, are integrated into the project's design before it commences, in consultation with key stakeholders.

**Construction**  
Environmental monitoring is in place to assess and respond to the effects of the operations, and this will continue throughout the life of the project.

**Production**  
Operators will have detailed agreements with government regulators and key stakeholders to ensure that the methods and processes they use are environmentally and socially appropriate. Environmental performance is actively monitored and audited during this stage.

**Closure and Rehabilitation**  
Over the life of the project, closure funds have been accrued and procedures have been planned to facilitate closure and rehabilitate the area after the site is shut down. In this phase, buildings, equipment and waste are removed, and rehabilitation continues.

**Licence acquisition**  
Applicants for tenements provide the Department of Industry and Resources with a statement outlining the proposed method of exploration and details of the proposed work program. This statement will include an assessment of mitigation options for social and environmental risks.

**Target generation**  
Even at the very earliest stage, careful consideration is given to the environment in which minerals or reserves may exist. Companies will decide not to proceed further if environmental and social sensitivities cannot be resolved.

**Ongoing monitoring and handover**  
Companies must satisfy all stakeholders that the site meets the conditions of the agreed land use. The project's owner/operator may continue to monitor the site for years to ensure it complies with or exceeds environmental standards.



## The resources cycle

### Target generation

The first stage in commencing a mining operation, always based on assessment of geoscientific data.

### Licence acquisition

A licence is required prior to commencing exploration activity. A number of government policy considerations are taken into account at this stage, including native title issues.

### Exploration

Exploration is the physical search for minerals or reserves. The initial exploration process may confirm or rule out the viability of a project or identify the need for further study.

### Advanced exploration

Advanced exploration involves larger-scale sampling and drilling. At this stage, detailed data are gathered and analysed to assess the viability of a project and the most appropriate processes to use.

### Planning and Permitting

This phase, which can last several years, focusses on predicting the capital and operating costs of a proposed project and on obtaining the permits needed to construct and operate.

### Construction

Construction can begin once a permit has been obtained. This process may take months or even years, depending on the scale and complexity of the operation.

### Production

The commencement of mining and minerals processing, or of hydrocarbons drilling and production, begins the operational stage of the project.

### Closure and Rehabilitation

Once all the viable ore/reserves have been extracted, the project enters a stage of closing down and tidying up. This involves removing structures and equipment. Rehabilitation outcomes, planned and agreed by stakeholders in advance, will vary from regenerating native ecosystems to meeting requirements of other land uses, such as parkland, farmland, recreation areas, or urban development.

### Ongoing monitoring and handover

The resources cycle finishes when regulatory authorities and key stakeholders are satisfied that the site is safe, stable, and self-sustaining.