



MINERAL RESOURCES LIMITED  
**BIODIVERSITY  
STRATEGY**





# ACKNOWLEDGEMENT OF COUNTRY

MINERAL RESOURCES LIMITED (MINRES) IS COMMITTED TO RECONCILIATION AND RECOGNISES AND RESPECTS THE SIGNIFICANCE OF ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLES' COMMUNITIES, CULTURES, AND HISTORIES.

MinRes acknowledges Aboriginal and Torres Strait Islander Peoples as the first and continuing custodians of the land and waters, and in doing so pays respect to Elders past and present. We extend this acknowledgment and respect to Indigenous Peoples and communities globally.

Where used herein "Indigenous Peoples" and "Indigenous Australians" refers to Aboriginal and Torres Strait Islander Peoples.



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The MinRes Biodiversity Strategy was reviewed and approved by the MinRes Board of Directors and Sustainability Committee on 27 October 2023.





Susie Corlett | Sustainability Chair

### BIODIVERSITY AS A CORNERSTONE OF RESPONSIBLE MINING PRACTICE

The Sustainability Committee endorses the Biodiversity Strategy as a pivotal document underscoring our commitment to integrating biodiversity management into our corporate culture and core business practices.

The Sustainability Committee plays a critical role in providing oversight of MinRes’ environmental and sustainability management including considering state, national and international perspectives and expectations for the mining industry.

In the rapidly evolving global landscape, there has never been a greater imperative to safeguard biodiversity.

MinRes recognises our business is not only responsible for the management of biodiversity in ecosystems where we operate, but such management is a fundamental business priority.

Our commitment to environmental management and genuine adoption of the mitigation hierarchy reflects our proactive aspirations for the creation of positive environmental outcomes and appropriate environmental management throughout the life of our operations.

This strategy emphasises biodiversity’s inextricable link to MinRes’ cultural values and the significance we associate with landscapes. As a progressive business, we understand the need for industry to adopt robust and comprehensive approaches to biodiversity management.

Our strategy is rooted in the mitigation hierarchy and the precautionary principle, serving as a framework for responsible practices and supporting the business to meet and exceed its regulatory requirements in environmental matters.

Importantly, it also supports a culture where everyone within our business, irrespective of role, is aware of and actively supports our environmental obligations and commitments.

Our strategy aligns our business practices with principles of environmental stewardship. The Sustainability Committee endorses this commitment and recognises the intrinsic value of biodiversity, its importance to our operations and reputation, and to the communities and landscapes where we operate.

We invite everyone to embrace this strategy as a personal responsibility, understanding that our collective efforts define the environmental legacies of future generations.



Susie Corlett  
Sustainability Chair

# BIODIVERSITY AND ENVIRONMENT

Ecosystems and the biodiversity they comprise are integral to human endeavour. Humans are inseparable from the ecosystems in which we live and work and our health and wellbeing is fundamentally tied to the condition of the natural environment.

Healthy ecosystems and resilient landscapes are also fundamental to operational sustainability in the mining industry. Corporate attitudes and societal expectations add increasing pressure for mining companies to minimise impacts on natural environments and establish positive and enduring social and environmental legacies. MinRes’ core business is unavoidably linked to the health of the natural environments in which we operate. Biodiversity has intrinsic and tangible value to ongoing operations, as well as the people and communities who live in the areas in which we work.



The mining and energy industry’s social license to operate depends upon strong capabilities in environmental management, rehabilitation, and ecological restoration. There is an expectation the industry will act as responsible stewards of biodiversity and leave behind ecological and cultural landscapes that offer opportunity and improved wellbeing for local communities. Post-mining and energy land uses should consider that the end-users of land, water, and biodiversity, as well as stakeholders, particularly Indigenous Peoples and other local communities, are critical to the resource development conversation to ensure that social and cultural values are recognised and integrated alongside ecological values.

MinRes acknowledges Australia’s Indigenous Peoples as custodians of an ancient cultural understanding that the health of people and Country are inseparable. Traditional land management has maintained healthy Country for thousands of generations through the practice of cultural lore and activities, and biodiversity is intrinsically intertwined with physical, social, cultural, and spiritual wellbeing. As recognised in the recent *State of the Environment Report* (2021), “Working Together” approaches combining traditional ecological knowledge and cultural ways of knowing with inductive science have achieved excellent land management outcomes. Environmental planning and management by the mining and energy industries should always consider how biodiversity interacts with and offers opportunity for collaborative engagement with Indigenous land management.



# INTRODUCTION

## WHAT IS BIODIVERSITY?

Biodiversity is more than just the number of plants and animals in an area. It represents the total variety, variability and interaction of living things at all levels - from genetic, to species, to ecosystem. This includes all organisms - from bacteria and fungi, to flora and fauna - and all the different roles and functions these organisms collectively play within the networks that form ecosystems. This includes the ecosystem services upon which humans rely.

Western Australia, where MinRes predominantly operates, is globally recognised for its exceptional biodiversity. For example, the Southwest Australian Floristic Region harbours over 8,000 species of plants, almost half of which are found nowhere else on earth, and is considered a globally significant biodiversity hotspot. The Pilbara region harbours more than 325 species of birds, more than 150 species of reptiles and amphibians, and around 50 species of mammals, while providing some of the last remaining habitat for many of these species. Even Western Australia's deserts and arid inland interior harbour high levels of biodiversity and many unique ecosystems.

However, many of the ecosystems found across our vast, ancient landscape are deceptively fragile. Our biodiversity is at risk from a variety of threats, with recent assessments such as the *State of the Environment Report* (2021) painting a concerning picture for the future of Australia's natural environment. The number of conservation-dependent species in Western Australia continues to rise, as do the number of threatened and priority ecological communities. Yet, Australia is one of the few countries with both the level of prosperity and appropriate knowledge to safeguard these immense natural assets, and as a nation we have an obligation to conserve and manage our biodiversity, including under international agreements such as the *Kunming-Montreal Global Biodiversity Framework*.

The management of lands under stewardship should be holistic and adaptive, recognising the impacts of mining on ecosystems can be significant and many factors, both internal and external, can influence environmental outcomes in the post-mining landscape.

## THE VALUE OF BIODIVERSITY

Biodiversity and environment are crucial considerations for the resources sector, due to the significant potential for activities to negatively impact the environment and the business risks arising from these impacts.

The environmental impacts of habitat loss resulting from clearing, mineral extraction and the storage of processed materials on the ecosystems in which activities occur can be profound and long-lasting. Additionally, the significant ecological impacts of secondary disturbances from mining activities, such as changes to fauna behaviour from noise, light and vibrations, are being increasingly recognised and considered in approvals and compliance processes.

Appropriate identification, characterisation, evaluation, avoidance or mitigation and monitoring of environmental impacts can reduce the potential risks to business operations including reputational damage. Inadequate consideration and management of these factors can impact upon social and environmental license to mine as well as jeopardising the economic viability of operations.



BIODIVERSITY IS THE **TOTAL VARIETY AND VARIABILITY OF LIVING THINGS**, AS WELL AS THE VARIETY AND **VARIABILITY OF THEIR INTERACTIONS**, AT ALL LEVELS – FROM GENETIC, TO SPECIES TO ECOSYSTEM.

The protection and preservation of biodiversity is not only good for natural ecosystems, it also benefits the people, communities and businesses which live and operate within them. Biodiversity underpins crucial ecosystem services such as the maintenance of air quality, climate resilience, global nutrition and food security, and it is inseparable from cultural values and the significance we associate with certain landscapes.

The demonstration of, and commitment to, the reduction of environmental impacts can improve business reputation and investor perception.





# OUR STRATEGY

The *MinRes Biodiversity Strategy* (the Strategy) provides a framework supporting the business to meet or exceed its regulatory requirements in relation to biodiversity matters. It also helps ensure MinRes meets the interests of key stakeholders and the expectations of regulators and the community. It is intended to align with and contribute to reporting requirements under key State, Commonwealth and international legislation, guidance and initiatives, such as the Taskforce on Nature-related Financial Disclosures. The Strategy aims to assist MinRes in understanding, evaluating, managing, monitoring and reporting on our nature-related risks and opportunities.

Protecting and conserving global biodiversity is a universal human responsibility. Appropriate consideration, minimisation and mitigation of business impacts on biodiversity is an expectation of good corporate citizenship.

### PURPOSE

The purpose of the Strategy is to articulate ways the business manages its collective interactions with biodiversity, identifies and evaluates environmental impacts, and tracks progress against established targets and goals.

The Strategy outlines the principles that guide MinRes’ governance processes, risk management, planning, and decision-making as well as the ways in which success will be evaluated.

### STRATEGIC OBJECTIVE

The strategic objective of the Strategy is to present one document endorsed by the MinRes Executive, which provides advice and overarching direction to business departments on matters relating to biodiversity, establishing policy, underpinning decision-making and driving procedures and process.

Additionally, the Strategy sets an actionable agenda for how the business will meaningfully measure, document, and report on its efforts to avoid, mitigate, restore and offset its biodiversity impacts.

### PRINCIPLES

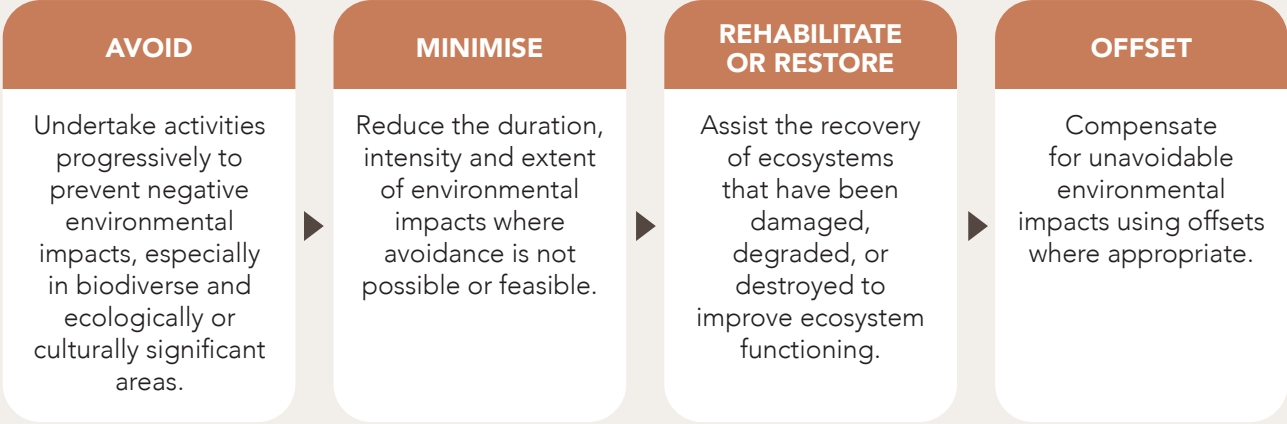
The Strategy is anchored upon application of the precautionary principle and the four core principles of the mitigation and conservation hierarchy:

- Avoid
- Minimise
- Rehabilitate or restore
- Offset.

Activities are undertaken in a progressive manner, seeking firstly to prevent negative environmental impacts and, where avoidance is not feasible, reduce impacts, assist environmental recovery after disturbance or compensate for impacts (Figure 1).



## BIODIVERSITY CONSERVATION AND MITIGATION OF ENVIRONMENTAL IMPACT



Improving biodiversity, ecological integrity and ecosystem services.  
Aspiring towards no net loss of biodiversity and, where possible, net positive biodiversity and ecosystem outcomes resulting from activities.



Figure 1. The four core principles of the mitigation hierarchy, and MinRes values underpinning these principles.

These principles fundamentally rely upon genuine and meaningful understanding of the biological, ecological and social-cultural values of the landscapes in which we operate, and the potential for activities to impact upon these values. Knowledge should underpin and support all four of the mitigation hierarchy principles and stakeholder engagement is crucial to all aspects of business operation.

The precautionary principle encourages taking preventive action in the face of uncertainty and exploring alternatives to potentially

harmful actions. It is particularly important in environmental matters because many ecosystems are highly complex and poorly understood, and impact or management decisions must often be made without comprehensive understanding of their implications on species or communities.

Adoption of the precautionary principle and the mitigation hierarchy supports the business in reducing and mitigating the environmental impacts resulting from our activities and, where possible, contributes to aspirations for achieving net positive biodiversity and ecosystem outcomes.



# OUR GOVERNANCE

## RELEVANT INTERNAL POLICIES AND PROCEDURES

The Strategy sits under the *MinRes Environment Policy*, which covers emissions to air and water, operational greenhouse gas (GHG) emissions, water use, waste generation, biodiversity, land management and rehabilitation. The *Environment Policy* is implemented through an environmental management system (EMS) and developed in line with the International Standards Organisation (ISO) 14001:2015. Our EMS includes operation-specific environmental management plans (EMPs) specifically developed to manage key environmental aspects and impacts at our operations, with supporting procedures, work instructions and forms.

Environmental aspects covered in EMPs include land clearing, flora and vegetation, fauna, soils, water, heritage, air quality, GHG emissions, energy, noise and vibration, waste rock, hydrocarbons, chemicals and non-mineralised waste.

## RISK REGISTER AND REPORTING

Biodiversity is captured within MinRes corporate risk registers, with the biodiversity risks articulated in these registers reviewed periodically to ensure the business remains agile and responsive to changing regulatory, climatic and social conditions that might influence risk ratings.

Performance against targets and goals for each action plan under the Strategy objectives is appraised quarterly and reported at least annually to the MinRes Board-level Sustainability Committee.

Reporting typically includes formal government reporting requirements to ensure accountability to regulatory authorities and the provision of information to the broader public and other stakeholders.

Further to this, MinRes discloses in accordance with the Global Reporting Initiative (GRI), which outlines a set of biodiversity-related criteria. The business discloses progress against these criteria in the Annual Reporting Suite made publicly available to all stakeholders on our [website](#).

## MEETING REGULATORY AND SECTORAL STANDARDS AND GUIDANCE

Striving toward leading practice requires constant review of national and international advice and its evolution through time in response to social and regulatory expectations. MinRes continually evaluates new literature and emerging advice pertaining to biodiversity and its effective management and conservation. The Strategy considers, is informed by, and aligns with various regulatory and sectoral standards and guidance (see Appendix 1). New standards and guidance will continue to be addressed as they become available.

To ensure our EMS remains relevant, MinRes subscribes to EnviroLaw (Environment Essentials), to obtain regular updates on environmental legislation, codes of practice, guidelines and published standards.

MinRes has representation on the Association of Mining and Exploration Companies Environment and Water Committee, and the Chamber of Minerals and Energy Environment Committee, which ensures we remain engaged with and informed about emerging developments in Australian environmental policy.



# POLICY STATEMENT

MinRes is committed to an environmental management approach which maintains our license to operate in an environmentally responsible and sustainable manner, while meeting legal, contractual and ethical standards.

MinRes aims to avoid, minimise and mitigate the environmental impacts of our business operations and restore, rehabilitate or offset any unavoidable damages to biodiversity and ecosystems in lands under our stewardship.

MinRes aspires toward net neutral and, where possible, net positive biodiversity outcomes from

our operational activities, leaving the landscapes and communities in which it operates with positive environmental legacies.

MinRes will ensure no environmental harm is caused beyond what is necessary to conduct our business and for which statutory approval has been received, and seeks to prevent impacts to Key Biodiversity Areas (KBAs), being "sites contributing significantly to the global persistence of biodiversity" (Union for the Conservation of Nature (IUCN) 2016), resulting from mining and energy activities.



# RISK MANAGEMENT

Impacts to biodiversity present numerous business risks (Table 1), including mine closure liabilities which represent significant economic costs to the business and further increase the environmental risks associated with operations. Native Title holders also have court-recognised biodiversity-dependent rights under Native Title, which mining activities can impair, and management must be directed to ensure those rights can be fully exercised during asset management and restored to the greatest extent practicable on closure.

**Table 1.** Examples of potential business risks resulting from insufficient consideration of biodiversity and environmental management in planning and operations.

Business risk from environmental impacts
Financial and logistic costs incurred by mitigating avoidable impacts or rectifying poor historical outcomes.
Costly delays in obtaining project approvals.
Fines and penalties associated with breaches of approvals, greater rehabilitation liabilities and levy payments.
Increased scrutiny on activities from investors and potential loss of capital and investment.
Reduced socially responsible investment index ratings, resulting in greater competition and market risk.
Forfeiture of tenements.
Loss of license to operate.
Legal and reputational damages/social license.
Loss of access to future exploration and project opportunities.
Greater exposure to environmental risks and infrastructure failure (e.g. tailings storage facilities).
Failure to meet the expectations of Traditional Owners and other Indigenous community stakeholders.
Potential for adverse health and safety outcomes.
Relationship damage with key stakeholders and collaborators.
Reduced employee wellbeing.

There is growing expectation for mining and energy companies to leave positive environmental legacies in the landscapes where they operate, including aspiring to achieve net neutral or even net positive impacts on biodiversity. To meet these expectations, it is crucial there is a Board-supported mandate that every person in the business understands and values biodiversity, striving to ensure all possible negative impacts are minimised as much as possible.

**Table 2.** Examples of the environmental impacts potentially resulting from mining activities, associated management actions and controls by which they may be mitigated.

Business risk from biodiversity impacts	Management actions/controls
Biodiversity loss, extirpation of local flora or fauna populations and potential species extinctions.	<ul style="list-style-type: none"><li>• Adherence to approved clearing areas and permits.</li><li>• Implementation of fauna and flora management plans.</li><li>• Appropriate baseline surveys.</li><li>• Land clearing procedures.</li></ul>
Partial or total loss of habitat, including critical habitat such as coarse woody debris, hollow bearing trees or cave structures.	<ul style="list-style-type: none"><li>• Rehabilitation and restoration works.</li><li>• Artificial habitat structure creation.</li><li>• Engagement with regional stakeholders to develop landscape-scale projects.</li></ul>
Fragmentation of habitat resulting from creation of infrastructure corridors and cumulative regional impacts.	<ul style="list-style-type: none"><li>• Rehabilitation and restoration works.</li><li>• Advanced offset opportunities.</li><li>• Engagement with regional stakeholders to develop landscape-scale projects.</li></ul>
Changes to water availability or quality through contamination, dewatering, injection and recharge and infrastructure impacts.	<ul style="list-style-type: none"><li>• Proper landform design.</li><li>• Implementation of water management plans.</li><li>• Water sensitive designs.</li></ul>
Direct death of fauna from vehicle strike, clearing activities or inadequate egress structures.	<ul style="list-style-type: none"><li>• Fauna management plans (MPs).</li><li>• Environmental education.</li><li>• Adherence to approved clearing areas and permits.</li></ul>
Alteration to fauna species behaviour from secondary disturbances such as noise, artificial light and vibration.	<ul style="list-style-type: none"><li>• Development and implementation of MPs.</li><li>• Implementation of noise, vibration and artificial light control measures.</li></ul>
Introduction and assisting spread of invasive species and pests.	<ul style="list-style-type: none"><li>• Feral fauna and weed MPs.</li><li>• Engagement with regional stakeholders to undertake joint targeted feral fauna and weed control programs.</li></ul>
Contamination from hydrocarbon spills, inappropriate waste disposal, leaching of materials, potentially acid forming material.	<ul style="list-style-type: none"><li>• Potentially acid forming MPs.</li><li>• Proper landform design.</li><li>• Water sensitive designs.</li><li>• Waste management strategy.</li></ul>
Reduced air quality and impacts to vegetation from dust and other particulates.	<ul style="list-style-type: none"><li>• Dust management strategies.</li><li>• Significant flora MPs.</li></ul>
Creation of post-mining environments unsuitable for flora and fauna requirements.	<ul style="list-style-type: none"><li>• Adequate planning and execution of rehabilitation and closure plans.</li><li>• Engagement in targeted research programs for significant species.</li></ul>
Changes to ecosystem structure and functioning, alteration to natural processes such as fire regimes and hydrological cycles.	<ul style="list-style-type: none"><li>• Appropriate baseline surveys.</li><li>• Fauna and flora MPs.</li><li>• Adequate planning and execution of rehabilitation and closure plans.</li></ul>
Contribution to changes in regional and global climate.	<ul style="list-style-type: none"><li>• Consideration of climate change in business policies.</li><li>• Emissions reduction efforts.</li><li>• Offset programs.</li></ul>
Erosion of genetic diversity and isolation or restriction of gene flow among flora and fauna populations.	<ul style="list-style-type: none"><li>• Fauna and flora MPs.</li><li>• Advanced offsets opportunities.</li><li>• Execution of effective rehabilitation and closure.</li></ul>



BIODIVERSITY OBJECTIVES, TARGETS AND GOALS

Ten high-level objectives capture how MinRes aspires to meaningfully apply the precautionary principle and mitigation hierarchy framework. They outline how the business manages its collective interactions with biodiversity, including identifying and evaluating environmental impacts from its supply chains, activities and operations.

These objectives are aspirational and supported by specific actionable plans and procedures, each of which has targets and goals that are measurable and time-bound allowing for progress to be tracked. The objectives of the Strategy are as follows:

- 1. Strive for net positive environmental impacts and biodiversity and ecosystem functioning beyond baseline compliance requirements.
- 2. Integrate biodiversity valuing, protection and awareness across all business operational stages, supply chains, and communities.
- 3. Take a holistic, life-of-mine/asset/resource, ecosystem and landscape level approach to biodiversity conservation and ecosystem management through understanding the biodiversity values in our areas of operation.
- 4. Manage and minimise biosecurity risks from invasive species, pathogens and pests.
- 5. Apply the mitigation hierarchy and precautionary principle to protect and prevent loss of species with a focus on threatened and culturally significant taxa and maintenance of high biodiversity areas and ecosystem services.
- 6. Implement conservation, restoration and offsetting activities with an aim to achieve outcomes at species, habitat and ecosystem levels.
- 7. Monitor biodiversity and ecosystem responses with robust metrics to track progress.
- 8. Seek opportunities to contribute and collaborate to promote positive environmental outcomes beyond land under company stewardship and within our supply chain.

- 9. Foster collaboration with stakeholders, particularly Indigenous Peoples, for broad-scale success in biodiversity conservation and ecosystem management.
- 10. Base environmental decision-making on science, reliable data and diverse cultural knowledge.

In addition to commitments under the *Environment Policy*, MinRes commits to no significant impacts to KBAs resulting from mining and energy activities and operates in accordance with all applicable legislation, standards, compliance obligations, and codes of practice. MinRes further commits to respect all legally designated protected areas and conservation significant species, including:

- International IUCN Category I-IV areas
- UNESCO Natural World Heritage Sites
- UNESCO Man and the Biosphere Reserves
- wetlands designated under the Convention on Wetlands of International Importance (the Ramsar Convention).



METRICS AND TARGETS

BASELINE AND REFERENCE DATA

One of the most important aspects of environmental management is the collection of sufficient information to inform when and what activities are required and at what stage these activities should be implemented. Without this data it can be extremely difficult, and even impossible, to properly evaluate changes within the ecosystem and determine when to intervene if conditions become unfavourable or undesired. Sound ecosystem management requires both a baseline and a reference.

- **Baseline:** Accurate information about the conditions and characteristics of the ecosystem, species or area of interest before any disturbance or restoration activities began, against which future changes in the attributes of that ecosystem, species or area of interest can be progressively monitored and evaluated.
- **Reference:** Detail about the condition and characteristics of an ecosystem, species or area of interest that represents the desired end goal of management activities, such as an undisturbed ecosystem nearby to a disturbed area needing restoration or rehabilitation, against which changes in condition and characteristics can be compared over time.



Sound baseline information is crucial to setting goals and targets for environmental management activities, and a reference is necessary because it can assist in determining whether changes observed through time are in response to management activities or reflective of broader regional environmental trends from factors such as climatic change.

Baseline data is best collected through comprehensive biodiversity, environmental and social-cultural surveys, ideally prior to any disturbance. Baseline surveys lay the foundations for measuring changes in ecological condition, community composition, ecosystem function and convergence towards established or desired targets. The quality and quantity of data gathered at this point is key to ensuring an appropriate baseline is set.

Gathering diverse data can be of significant value. For example, regional surveys of soil characteristics coupled with plant species composition and mapping of vegetation groupings can assist in identifying native plant species with traits or characteristics that might be favoured, or unfavoured, by conditions of a post-mining landscape.

Baseline data gathering is also important to identify knowledge gaps and prioritise areas for research. Corrective actions are likely to be more successful and cost-effective when informed by proactive studies started early rather than reactive, as impacts begin to compound. For example, managing invasive species when first observed, rather than after they have become established in an ecosystem.



MINE CLOSURE, REHABILITATION AND ECOLOGICAL RESTORATION

Mine closure is the negotiated process by which MinRes plans and prepares the decommissioning of a mine, or an asset, for post-mining land use. This is done through ensuring legal and social obligations are met and relinquishing liability for the continued management of the land to another party. MinRes recognises that closure planning is integral to our business processes and commits to integrating closure considerations throughout all stages of our activities to transition to closure effectively (Figure 2).

We recognise the ongoing nature of closure commitments throughout the lifecycle of our mining operations and work to ensure closure management accounts for economic, environmental, social and governance issues. The MinRes vision for mine closure is optimised outcomes for closure, while aligning our practices to the principles of intergenerational equity. We also commit to engaging Traditional Owners throughout the closure planning process and to assist with closure operations.

Optimised closure outcomes balance values, obligations, safety, costs and the expectations of external stakeholders to enable divestment, relinquishment, ongoing management and use of the site for an alternative land use, or a combination of these.



Figure 2: MinRes Mine Closure Framework.

The application of the MinRes Mine Closure Framework protects and creates value for MinRes while maintaining our social license to operate by:

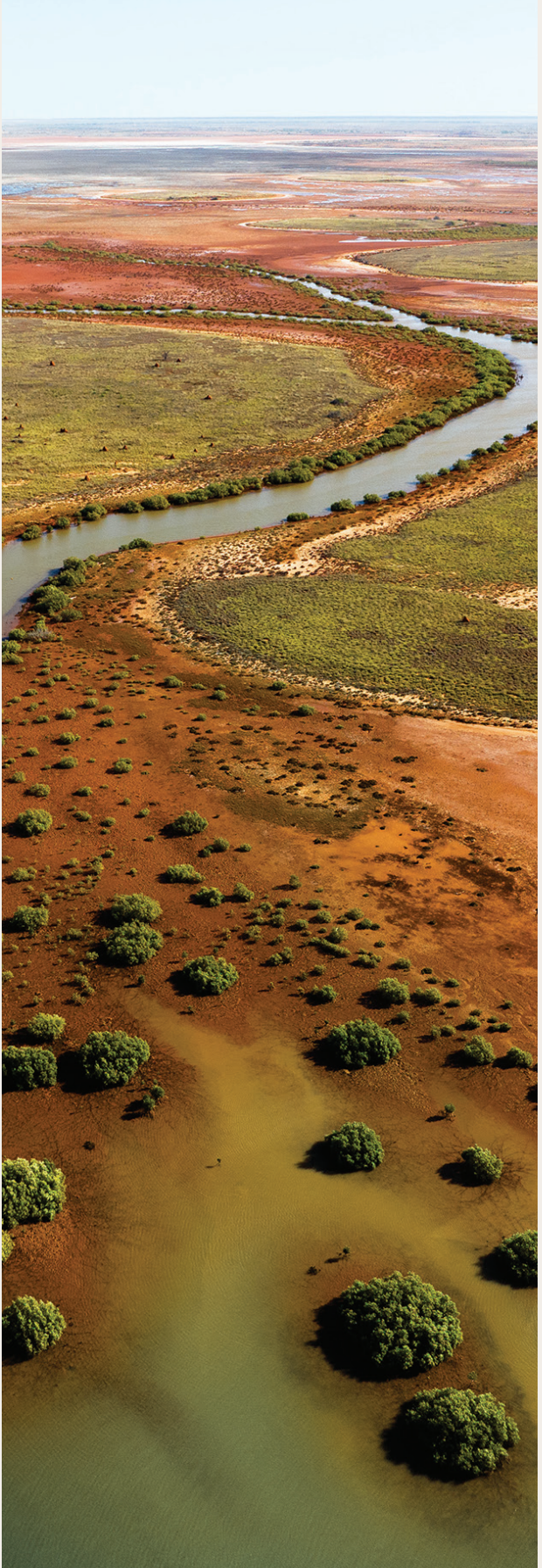
- working collaboratively with our stakeholders to explore future land use options and develop closure plans based on the agreed future use
- ensuring MinRes is adequately provisioned to comply with all relevant legal obligations and commitments once mining is complete
- seeking to improve closure outcomes and reduce closure costs through continuous improvement and innovation
- fostering a culture where planning for closure is considered at each development stage and working together to achieve the outcomes described in our closure plans.

Often, rehabilitation and ecological restoration are fundamental activities in mine closure, as post-mining land use frequently includes an expectation for the reinstatement of native ecosystems harbouring biodiverse plant and animal communities. Peak international body, the Society for Ecological Restoration, defines ecological restoration (also called ecosystem restoration) as “the process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed” and rehabilitation as “direct or indirect actions with the aim of reinstating a level of ecosystem functionality where ecological restoration is not sought, but rather renewed and ongoing provision of ecosystem goods and services” (Gann et al. 2019).

Ecological restoration, which is a common expectation of mine closure, involves ensuring ecosystems are returned that are:

- Functional - the roles and processes that arise from living and non-living components of an ecosystem.
- Representative - similarity to an appropriate reference community.
- Resilient - capacity to recover following disturbances.

Ecological restoration is one of the most important global priorities for the coming decades, as highlighted by the United Nations *Declaration of the Decade on Ecosystem Restoration* and international agreements such as the [Rio Conventions](#), the [Bonn Challenge](#) and the [United Nation’s Forest and Landscape Restoration Mechanism](#). MinRes aspires towards the principles of ecological restoration in closure planning and closure works wherever appropriate for the post-mining land use.





MONITORING

Monitoring is critical to effective closure and general environmental management, as it enables tracking of progress towards goals, detects issues that need intervention and provides evidence of standards compliance to regulators and stakeholders. MinRes commits to ensuring all environmental assessment, management, planning, implementation of mitigation measures and monitoring is carried out and documented by competent professionals using appropriate methodologies.

Monitoring needs to be as broad in scope as possible because trying to determine the trajectory of an ecosystem using highly simplified metrics, while potentially appealing from a cost efficiency perspective, is unlikely to yield convincing results.

Monitoring must have sufficient multi-factor precision to enable change detection across many

ecosystem components and interactions, including human dimensions such as factors of cultural or social significance to stakeholders.

Environmental monitoring has been part of the mining industry for decades, with flora and fauna monitoring typically comprising assessment of species richness and composition combined with metrics such as vegetation cover and structure, and key habitat mapping.

Today, new tools are increasingly available to improve the scope, scale, rapidity and precision of what can be monitored. For example, genetic sequencing can provide information about the activity, diversity and functioning of soil microbial communities, while unmanned aerial vehicles can greatly improve the speed at which landscape level data is acquired with very high resolution and repeatability.

MinRes continuously evaluates new technologies in environmental monitoring.



REVIEW, IMPROVEMENT,  
AND COMMUNICATION

The Strategy is a living document and will be updated in line with evolving biodiversity-related policy and guidance to ensure regulatory requirements and stakeholder expectations continue to be met as they change over time.

MinRes aims to continuously review and improve the Strategy to ensure it remains relevant and effective, committing to an annual review and a three-year formal evaluation schedule. All action plans will be reassessed during the formal evaluation, with metrics, targets, and goals revised as required for the subsequent three-year period.

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- KBA Standards and Appeals Committee of IUCN SSC/WCPA (2022). Guidelines for using A Global Standard for the Identification of Key Biodiversity Areas. Version 1.2. Gland, Switzerland: IUCN.





APPENDIX 1

The following legislation, leading international standards, guidelines and frameworks have been considered in development of the *MinRes Biodiversity Strategy*:

- **International Principles and Standards for the Ecological Restoration and Recovery of Mine Sites**  
(Society for Ecological Restoration, 2022)
- **ISO 14001 and related standards in environmental management**  
(International Standards Organization, 2015 to 2019)
- **GRI 304: Biodiversity 2016 Topic Standard Project for Biodiversity**  
(Global Reporting Initiative, 2016 revised 2023)
- **TNFD Nature-Related Risk & Opportunity Management and Disclosure Framework**  
(Taskforce on Nature-related Financial Disclosures, 2023)
- **IRMA Standard**  
(Initiative for Responsible Mining Assurance, 2023)
- **Science Based Targets for Nature Initial Guidance for Business**  
(Science Based Targets Network, 2020)
- **Good Practice Guidance for Mining and Biodiversity**  
(International Council on Mining and Metals, 2013)
- **A Framework for Developing Completion Criteria in Western Australia**  
(Western Australian Biodiversity Science Institute, 2019)
- **Biodiversity Management Leading Practice Sustainable Development Program for the Mining Industry**  
(Australian Government, 2016)
- **A Global Standard for the Identification of Key Biodiversity Areas**  
(IUCN Species Survival Commission and IUCN World Commission on Protected areas, 2016)
- **IUCN Review Protocol for Biodiversity Net Gain: a guide for undertaking independent reviews of progress toward a net gain for biodiversity** (IUCN Global Business and Biodiversity Programme, 2017)
- **CDP Reporting Guidance: Climate Change, Water Security, and Forests Programs**  
(CDP, 2023)
- **Guidelines for using A Global Standard for the Identification of Key Biodiversity Areas**  
(KBA Standards and Appeals Committee of IUCN SSC/WCPA, 2022).

**Appendix Table 1.** An outline of key regulations, guidelines, handbooks and standards MinRes reports or discloses against, is guided by or certified through, or assessed under, relating to biodiversity and environmental management.

Regulation/Standard	Description	Impact to MinRes
GRI 304: Biodiversity 2016	The Global Reporting Initiative (GRI) has launched a revised reporting standard for measuring the impacts of organisations on biodiversity. The <i>GRI Biodiversity Standard</i> aims to help companies report on their impact on nature and is designed to be part of the solution, enabling organisations to publicly disclose their most significant impacts on biodiversity. The standard significantly updates the existing biodiversity reporting guidelines, most notably facilitating reporting of impacts throughout the supply chain, given many biodiversity impacts are found beyond the scope of a company's own operations.	MinRes reports in accordance with the GRI. The new standard is anticipated to have a significant impact on company reporting as it will require the company to disclose further detail around significant impacts on biodiversity in its operations and supply chains and to report on progress towards achieving biodiversity goals.
The Taskforce on Nature-related Financial Disclosures	The Taskforce on Nature-related Financial Disclosures (TNFD) is a market-led, science-based framework that enables companies and financial institutions to integrate nature into decision-making. The TNFD framework will enable companies to disclose on the full set of nature-related dependencies, impacts, risks and opportunities (including climate), of their operations and across their value chain.	The TNFD will have a significant impact on mining companies' reporting as it will require disclosure on their nature-related dependencies, impacts, risks and opportunities (including climate), of their operations and across their value chain.
Science Based Targets for Nature	Science-based targets for nature are a corporate target-setting framework that uses science to define a company's role in protecting and restoring nature. The Science Based Targets Network (SBTN) is a collaboration between leading global non-profit and mission-driven organisations. The SBTN methods, tools, and guidance are under development, and SBTN released SBTs for nature v1 in March 2023. The SBTN target-setting tools and guidance are still in draft form and subject to change.	Provides a framework for companies to set science-based targets to reduce their environmental impact, which can help them to reduce costs, increase efficiency and improve their reputation. As the methodology does not currently include use of biodiversity offsets, MinRes does not align to but may take guidance from the methods and tools.
CDP Climate Change, Water Security and Forests Program	CDP (formerly the Carbon Disclosure Project) is an international organisation encouraging companies and cities to disclose their environmental impact, particularly their carbon emissions via climate change, water security and forest related risk surveys. CDP requires participating organisations to disclose governance metrics, risks, opportunities and performance - all of which can have interlinkages with biodiversity.	MinRes does not disclose under the CDP, however key metrics from the questionnaires may be taken into consideration when developing strategy to ensure alignment with market disclosure expectations.
ICMM Good Practice Guidance for Mining and Biodiversity	Created for mining professionals to improve biodiversity management throughout the mine cycle and to support relationships between mining and biodiversity professionals by promoting an enhanced mutual understanding.	MinRes is not a member of ICMM, however key guidance papers and performance standards may be considered when developing strategy to ensure alignment with market disclosure expectations and ensure competitive relevance with peer management of salient ESG issues.
International Principles and Standards for the Ecological Restoration and Recovery of Mine Sites	The <i>SER Standards for the Ecological Restoration and Recovery of Mine Sites</i> were developed from earlier <i>Standards for the Practice of Ecological Restoration</i> , first published in 2016 and revised in 2019. The standards provide the most scientifically supported framework for undertaking ecological restoration and other restorative activities, such as rehabilitation in post-mining landscapes, and have been adopted by industry around the world.	Though the standards are not binding statutory guidance, they provide a crucial framework for the theory and practice behind various closure activities and approaches to recovery of ecosystems following mining.



Regulation/Standard	Description	Impact to MinRes
ISO 14001 and related standards in environmental management.	The group of ISO 14000 standards were developed as a mechanism to assist companies and organisations in understanding and managing various environmental responsibilities. ISO 14001 sets out the criteria for an environmental management system, which is eligible for certification. It maps out a framework that a company or organisation can follow to set up an effective environmental management system.	MinRes is aligned with ISO 14001 and has formal certification at its Mt Marion operations. No expansion of this certification is currently planned but the business remains guided by the ISO 14000 family of standards.
IRMA Standard	The IRMA standard attempts to define what comprises best practice in responsible mining, providing a list of expectations against which companies can be audited for benchmarking purposes. The standard covers environmental responsibility, alongside business integrity, planning for positive legacies and social responsibility.	MinRes has begun the self-assessment process against the IRMA Standards for our Wodgina operations.
WABSI a framework for developing completion criteria in Western Australia.	The Western Australian Biodiversity Science Institute (WABSI) completion criteria framework was developed to assist the Western Australian mining industry in developing robust, realistic and defensible completion criteria for improving closure outcomes and ensuring alignment with regulator and community expectations for closure.	The framework provides a detailed guidance tool for developing completion criteria and assisting with mine planning at all stages. While the framework is not a statutory document, it is widely and strongly endorsed by various regulators including DMIRS.
Biodiversity Management Leading Practice Sustainable Development Program for the Mining Industry.	The <i>Sustainable Development Program</i> is a leading practice handbook developed by the Department of Industry, Science and Resources, intended to promote sustainable mining practices by providing practical information around expectations in biodiversity and other environmental matters.	The handbook provides useful detail to inform management approaches and environmental sustainability targets.
A Global Standard for the Identification of Key Biodiversity Areas.	The KBA standard outlines and defines the characteristics of key biodiversity areas, anchored by the strong reputation of the IUCN as a trusted independent global advocate for biodiversity and the environment. There has been broad uptake of the KBA standard in environmental impact goal setting by industry around the world and it underpins expectations for including major initiatives such as the IRMA Standard.	As an expectation in the IRMA Standards, and as a robust approach to avoid undue environmental impacts on highly sensitive and biodiverse ecosystems, MinRes adopts the KBA standard in environmental impact assessment and implementation of the mitigation hierarchy.
IUCN Review Protocol for Biodiversity Net Gain: a guide for undertaking independent reviews of progress toward a net gain for biodiversity.	Developed collaboratively with numerous partners and experts, the review protocol helps guide companies in transforming operations toward improved biodiversity and sustainable development outcomes. It provides a suite of tools to assist businesses in meeting commitments to safeguard nature and biodiversity.	In aspiring towards net positive biodiversity outcomes, MinRes is guided by principles articulated in the review protocol and employs the framework in developing sustainable development targets and approaches.







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