

Pilbara Rehabilitation Group: industry working together

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Abstract

The Western Australian Pilbara region is undergoing significant mining activity where the cumulative scale of disturbance has intensified the focus on effective land rehabilitation. Success requires proven techniques to re-establish the region's unique ecology, particularly with the constraints of skeletal soils, arid climate with infrequent but intense rainfall, and complex native seed germination requirements.

Since these challenges are similar for neighbouring operators managing the same landscape, collaboration beyond tenure-defined boundaries presents scope to realise significant landscape level opportunities. The Pilbara Rehabilitation Group (PRG) is an industry-led, practitioner-focused partnership bringing together major mining and energy companies operating in the Pilbara, including Rio Tinto, BHP, Hancock Iron Ore, Fortescue, and Mineral Resources Limited.

PRG fosters a trusted peer network through webinars, workshops, forums, and site visits where members exchange operational experience and insights on priorities such as research and trials, native seed sourcing and supply, progressive rehabilitation, mine plan integration and execution, completion criteria and monitoring approaches suited to Pilbara conditions. These platforms have enabled partnership in collaborative projects, including benchmarking rehabilitation performance criteria and refining both landform design principles and execution methods using applied, proven examples.

Building on this strong foundation, PRG's initiatives enable members to de-risk innovation by pooling resources, sharing costs and collectively learning from trials. Its structure unites practitioners from companies at different stages of maturity, breaking down siloed thinking and accelerating the uptake of proven techniques. These combined efforts create a shared knowledge base that upskills practitioners, drives development of standardised best practice and provides opportunity for the co-development of scalable solutions for improved rehabilitation outcomes.

This paper outlines PRG's collaborative approach, showcases key projects and shares lessons learned, highlighting how alignment on priorities delivers tangible benefits in the Pilbara with insights transferable to other mining regions facing similar challenges.

Keywords: Pilbara, industry collaboration, knowledge sharing, mine rehabilitation, landform design, completion criteria, industry-led, partnership

1 Introduction

The Pilbara region of Western Australia hosts some of Australia's largest mining operations. Rehabilitation here is shaped by distinctive constraints including shallow soils, unpredictable rainfall patterns, complex native seed germination requirements and historical land management practices.

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These challenges are shared across operators, most of whom occupy adjoining tenements and engage with a common set of stakeholders, including Traditional Owners. In this context there is growing recognition of the need for landscape-scale approaches to environmental outcomes. Operating in isolation can delay the development and adoption of effective rehabilitation approaches as companies often trial new methods and technologies individually before wider implementation; a pattern that prolongs knowledge gaps and increases cumulative cost across the industry.

Specialist rehabilitation expertise does not emerge directly from university training; it is built through years of field experience, trial and error, and mentored practice. Yet in the Pilbara, the pool of experienced rehabilitation practitioners is small and the transfer of operational knowledge between organisations has historically been limited.

In 2012 the Pilbara Rehabilitation Group (PRG) was formed as an industry-led, practitioner-focused partnership to address these limitations and facilitate collaborative knowledge sharing. This paper describes PRG's approach, outlines key collaborative projects and summarises lessons learned, demonstrating how coordination on rehabilitation priorities can deliver measurable benefits in the Pilbara and offer transferable insights for other mining regions.

1.1 The Pilbara context

The Pilbara region of Western Australia is recognised for its high biodiversity, containing unique ecosystems, plant communities and fauna adapted to extreme environmental conditions. Landscapes range from rugged ranges and rocky escarpments to expansive spinifex plains, ephemeral creek systems and coastal habitats, each supporting distinctive ecological assemblages (Department of Conservation and Land Management 2001).

These landscapes also hold profound cultural significance for Traditional Owners, whose connection to Country spans tens of thousands of years. Sites across the Pilbara carry deep meaning linked to water sources, native animals, landforms, and seasonal cycles, and form part of ongoing responsibilities for stewardship and care. Respect for these values is a central consideration in how land is managed, disturbed and ultimately rehabilitated.

The same landscapes contain significant deposits of minerals and hydrocarbons, making the Pilbara one of Australia's most important regions for mining and resource development. Mining, predominantly large-scale open cut, has created extensive waste rock landforms, deep open voids, tailings storage facilities and long infrastructure corridors. Rehabilitation designs must address physical stability, drainage control and erosion tolerance suited to local climate and waste material properties (DMPE 2025; Howard & Loch 2019).

The Pilbara's arid to semi-arid climate, skeletal soils and specialised ecology create a fundamentally different environment than other mining regions. Skeletal soils limit the availability and quality of growth media. Selective stripping, careful stockpiling to preserve seedbank viability, and direct topsoil return are often required (Erickson et al. 2017). This has not been consistently achieved under historical management practices. Native seed supply is constrained by seasonal collection windows, low natural yields, and species-specific dormancy mechanisms that may require treatments such as scarification or smoke application (Erickson et al. 2017). Rehabilitation schedules must work within narrow climatic windows as extended droughts hinder establishment; meanwhile, extreme and unpredictable rainfall can erode surfaces before vegetation stabilises them (Erickson et al. 2017).

Collectively these factors mean that rehabilitation knowledge developed in other Australian or global mining regions often cannot be directly applied in the Pilbara. This reinforces the importance of regionally specific research, trials and knowledge sharing between practitioners working in the same landscape.

1.2 Regulatory context and industry necessity

Western Australia's regulatory framework for rehabilitation has strengthened considerably over time, and industry's capacity and appetite to meet, and in some cases exceed, regulatory expectations has evolved

alongside it (Unger et al. 2020). Under this framework, rehabilitation is expected to return disturbed land to a condition that is safe, stable, non-polluting, considerate of cultural values and capable of sustaining agreed post-mining land uses without unacceptable long-term liability to the state (DMPE 2025). This expectation is reflected in the requirement for mine closure plans (MCPs), introduced through amendments to the *Mining Act 1978* (WA) in 2010, and further emphasis on progressive rehabilitation across the life of a project in later amendments (DMPE 2025; Kragt et al. 2019). For most mining projects, these expectations are administered by the Department of Mines, Petroleum and Exploration (DMPE) under the *Mining Act 1978* (WA), although the *Environmental Protection Act 1986* (WA), administered through the Environmental Protection Authority (EPA), may also apply to projects subject to environmental impact assessment.

In the Pilbara, large-scale, long-term regional proposals further illustrate this growing emphasis on mine rehabilitation. In 2018, when assessing a strategic proposal for large-scale mining across over 100 years, the EPA explicitly recognised the “current difficulties in achieving consistent rehabilitation outcomes in the region” and required ongoing rehabilitation reporting (EPA 2018). The scale, duration and regional extent of such proposals heightened the importance of demonstrating rehabilitation performance and measurable progress during operations, rather than relying solely on end-of-life closure commitments. In practice, these obligations need to influence mine planning from an early stage, with rehabilitation activities embedded in mine schedules to facilitate progressive rehabilitation.

Progress against these outcomes must then be monitored and assessed against completion criteria, which translate broad closure objectives into measurable indicators of rehabilitation success. These criteria are tailored to site conditions and must be supported by credible evidence of long-term performance (Kragt et al. 2019). In the Pilbara, however, the scarcity of intact reference ecosystems can mean that criteria are based on functional benchmarks rather than full species return (Kragt et al. 2019). Demonstrating landform stability over relevant timescales also remains a significant technical challenge, given the scale of constructed landforms and the Pilbara’s variable and intense rainfall regime (Howard & Loch 2019).

Alongside regulatory change, rehabilitation expectations are also increasingly shaped by growing Traditional Owner involvement in closure planning and rehabilitation. In practice, this has contributed to stronger expectations for progressive rehabilitation, including traditional owner participation in rehabilitation activities (e.g. seed collection, rehabilitation execution, monitoring and maintenance), as well as greater integration of cultural values into rehabilitation planning (e.g. inclusion of culturally important species in seed mixes).

The industry needs credible progressive rehabilitation aligned with measurable criteria due to multiple large mining projects forecast to close in coming years. Demonstrating consistency and transparency in rehabilitation performance across operators builds regulator confidence, supports timely approvals for new developments, and reinforces the social licence to operate and close with traditional owners and community stakeholders.

1.3 The need for collaborative knowledge sharing

Mining in the Pilbara is concentrated among a small number of large operators who share similar landscape challenges and often the same stakeholders, including traditional owners. The physical, operational and biological constraints described in the preceding sections affect all operations, though to varying extents depending on landform type, material characterisation, mine age and the resources available to dedicate to rehabilitation.

Specialist knowledge in mine rehabilitation is not a standard output of university training. It accumulates through field experience, mentored practice and iterative learning across multiple seasons and site conditions. This makes access to experienced practitioners and their operational knowledge particularly valuable, and particularly unequal across the industry. Junior mining companies or those at earlier stages of rehabilitation maturity may lack the internal capacity to develop this knowledge independently yet face the same regulatory requirements and ecological constraints as larger, more-established companies.

Historically, companies have trialled rehabilitation technologies and methods independently, with adoption guided by internal assessments of risk, cost and feasibility. Although this can support internal confidence in implementation, it can also slow the uptake of new methods, increase costs and allow the same failures to be repeated across organisations without broader sector learning.

Commercial sensitivity has often limited operational knowledge sharing (Unger et al. 2020). However, when operators face comparable constraints and work within contiguous landscapes, the competitive value of withholding lessons learned is limited. Effective knowledge management in mine closure settings requires deliberate structures for sharing because the costs of knowledge loss and duplication fall across the whole industry (Tones et al. 2021; Unger et al. 2020). Collaboration can reduce duplication in trial work, enable larger-scale and more robust testing, and provide less-resourced operations with access to knowledge they might not have generated independently.

The PRG provides a structured forum for this kind of cooperation, bringing together in-house practitioners from across the region's major operators. The sections that follow describe how the group came to be, how it is structured and what it has been able to achieve when practitioners working on the same challenges decide to work together.

2 The Pilbara Rehabilitation Group

The PRG was established in 2012 in response to growing recognition that Pilbara mining operations were facing similar technical, logistical and ecological rehabilitation challenges yet were each working in isolation. Companies sought a practical forum where rehabilitation practitioners could openly share experiences, both successes and failures, and work together on solutions that made sense for the Pilbara's scale, climate and regulatory setting. The PRG currently consists of 6 member companies including BHP, Fortescue, Hancock Iron Ore, Mineral Resources Limited and Rio Tinto, which combined have over 30 mining operations within the Pilbara. Figure 1 shows the geographic distribution of PRG member operations across the region. Figure 2 illustrates the PRG's growth trajectory and key milestones from its establishment in 2012 through to 2026.

The PRG is deliberately industry-only, limited to in-house representatives from member companies. This helps reduce competitive tension and creates an environment where members are comfortable sharing and learning from each other's experiences. External specialists, technical experts or regulatory representatives are occasionally invited to provide research findings or updates on legislation, or to undertake technical work for joint PRG projects.

A defining characteristic of the group is its inclusiveness. The PRG is open to all mining and resource companies operating in the Pilbara, regardless of size. It welcomes representatives at all experience levels, from advisors through to managers, including practitioners based onsite as well as those in corporate roles. This broad representation strengthens the group's collective capability and ensures that diverse operational perspectives inform decision-making. Importantly, the mix of experience levels has also led to informal mentoring relationships forming between practitioners, providing additional support and helping build capability across companies.

Governance of the PRG is overseen by a committee comprising one lead member and an additional representative from each participating company. There are 3 rotating leadership roles (chair, vice-chair and secretary), each appointed for 12-month terms, voted in by committee members. There are quarterly committee meetings with quorum requirements, ensuring active participation to ensure decisions are made collaboratively. A core element of the PRG's governance is its confidentiality provisions, which require shared information to be kept within the group unless a company gives permission for it to be used elsewhere. This foundation of trust has played a major role in the group's success.

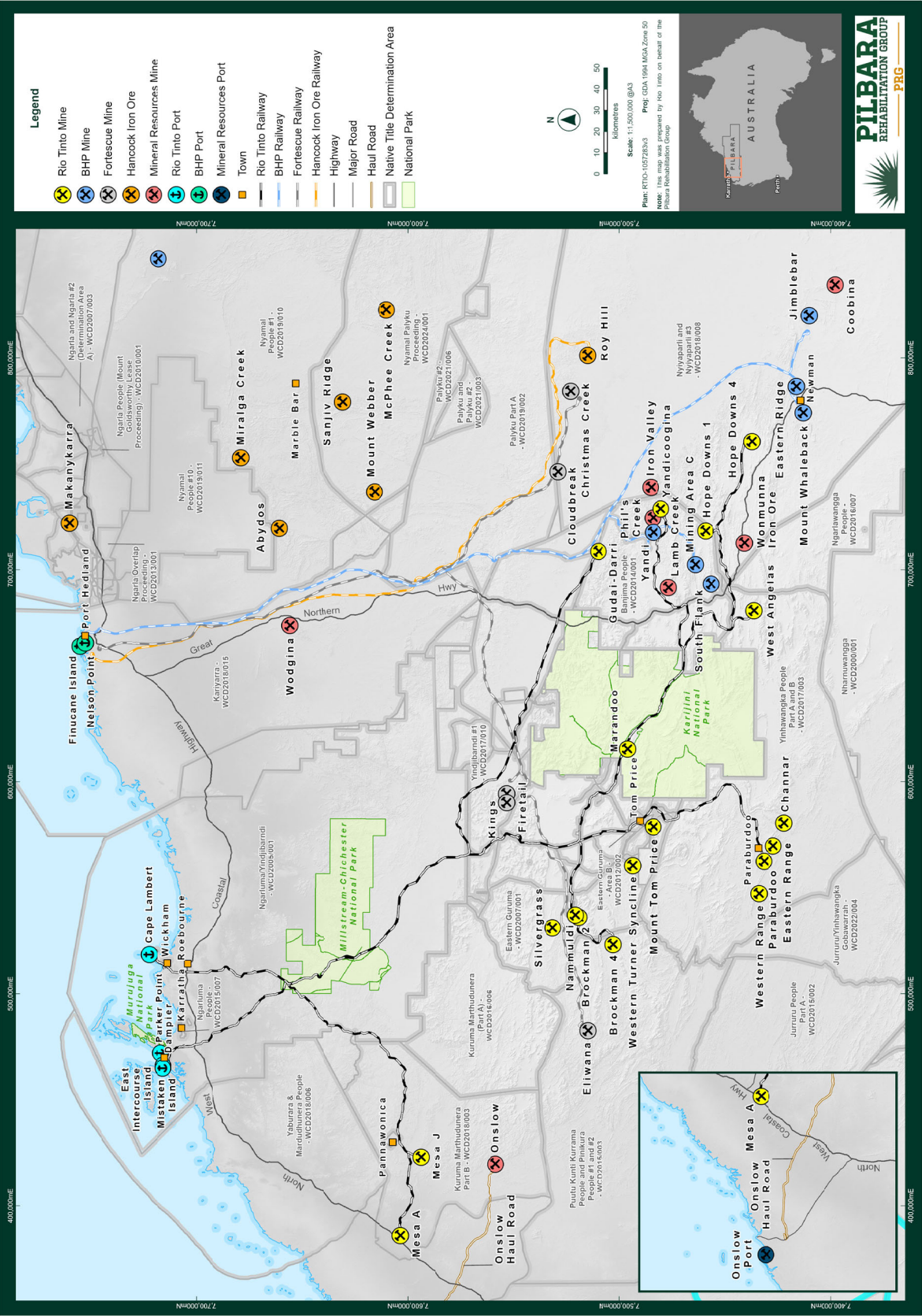


Figure 1 Overview of Pilbara mining operations and Pilbara Rehabilitation Group member organisations

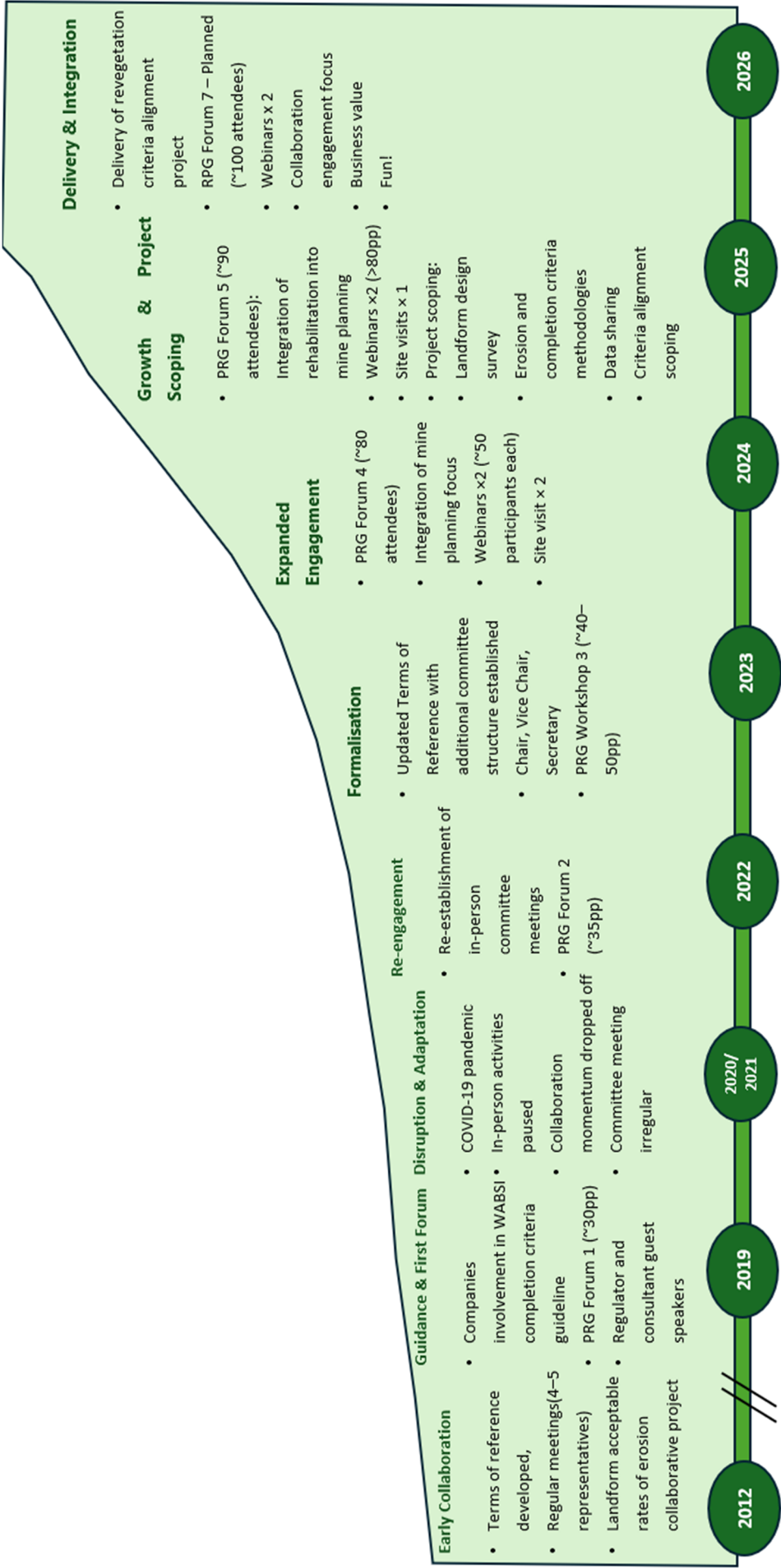


Figure 2 Pilbara Rehabilitation Group (PRG) growth trajectory showing key phases, milestones and participation from 2012 to 2026 (Western Australian Biodiversity Science Institute [WABSI])

2.1 Priority focus areas

The PRG prioritises topics where member companies face common challenges and where understanding across the Pilbara is still developing. These are areas where practitioners frequently encounter similar issues, yet the underlying processes, best practice approaches or long-term outcomes are not fully understood. By focusing on these shared knowledge gaps, the group can exchange practical insights, compare experiences and build a clearer picture of what is working across the region. Priority focus areas include:

- research and trials addressing regional knowledge gaps – on-ground trials and investigations covering soil treatments, vegetation establishment and weed management. By openly discussing what has worked and what has not, companies can build a stronger understanding of how rehabilitation treatments perform across different sites, soil types and seasonal conditions
- rehabilitation execution methods – practical rehabilitation execution methods including ripping designs, equipment selection, material handling, sequencing, drainage treatments and seeding techniques. These discussions help practitioners compare approaches, troubleshoot challenges and bring proven techniques into their own processes
- seed supply chain challenges – including seed collection, provenance requirements, storage conditions, dormancy treatment, viability testing and forecasting demand. This helps companies understand regional constraints, identify emerging risks and share practical solutions for managing one of the biggest bottlenecks in Pilbara rehabilitation
- integrating rehabilitation into mine planning – a major challenge across the industry. By exchanging experiences from sites of different ages, sizes and levels of maturity, members can better understand the common barriers to integration, learn from what has worked well (and what has not), and identify practical ways to embed rehabilitation earlier and more effectively in their own mine plans
- development and refinement of completion criteria – comparing approaches to developing, assessing and updating completion criteria, including different interpretation of regulator expectations. These are important aspects to work together on to ensure aligned approaches and rehabilitation outcomes throughout the region
- monitoring methods and technologies – Monitoring techniques, data collection methods and use of new technologies such as drones, remote sensing and automated analysis tools are compared.

2.2 Knowledge sharing

The PRG provides multiple knowledge-sharing methods to ensure information is accessible and relevant to practitioners at all levels (Figure 3). Importantly, these knowledge-sharing forums are also open to internal teams that work closely with rehabilitation, including mine planning, environment and hydrology. Information is shared through both formal and informal channels:

- webinars – Free webinars open to wider teams outside of the committee members feature presentations from 1 or 2 member companies on trial outcomes, new technologies, research findings or regulatory updates. Webinars occur around 2 or 3 times a year
- annual in-person forum or workshop – Member companies share their rehabilitation planning, progress, challenges, innovations and research activities at a half- or full-day event (Figure 4). Guest speakers, including consultants and researchers, provide additional technical insight. The forum is a key avenue for identifying shared priorities and regional knowledge gaps, and it also offers valuable networking opportunities. Importantly, there is no cost for practitioners to attend, ensuring accessibility to drive strong participation across companies. In 2025, 90 practitioners attended the forum, with numbers increasing year on year

- site visits – introduced in 2024, visits are hosted at operations including Hancock Iron Ore (Roy Hill mine), BHP (Whaleback and Jumblebar) and Rio Tinto (Tom Price and Channar). These site visits are open to all companies, not just committee members, and give practitioners the chance to see rehabilitation works firsthand rather than only hearing about them in presentations (Figure 5). Being on the ground allows members to walk the landforms, examine soil profiles, observe maintenance practices and discuss challenges directly with the teams undertaking the work
- quarterly committee meetings – while primarily used to coordinate PRG events and projects, these meetings also provide space for members to seek advice and discuss new methods, trials or recent results from their operations. It is common for someone to raise a practical challenge by saying, “We’re having an issue with X—has anyone come across this?”
- informal sharing – emails and casual catch-ups provide opportunities to share information, datasets, photos and monitoring reports through a less formal platform.

Peer learning within the PRG has resulted in the direct uptake of approaches across member companies. An example is discussions about seed inventory management software, which led one company to adopt a software platform successfully being used by another. The connection was made during a PRG site visit, where practitioners later met independently to walk through system functionality and integration.

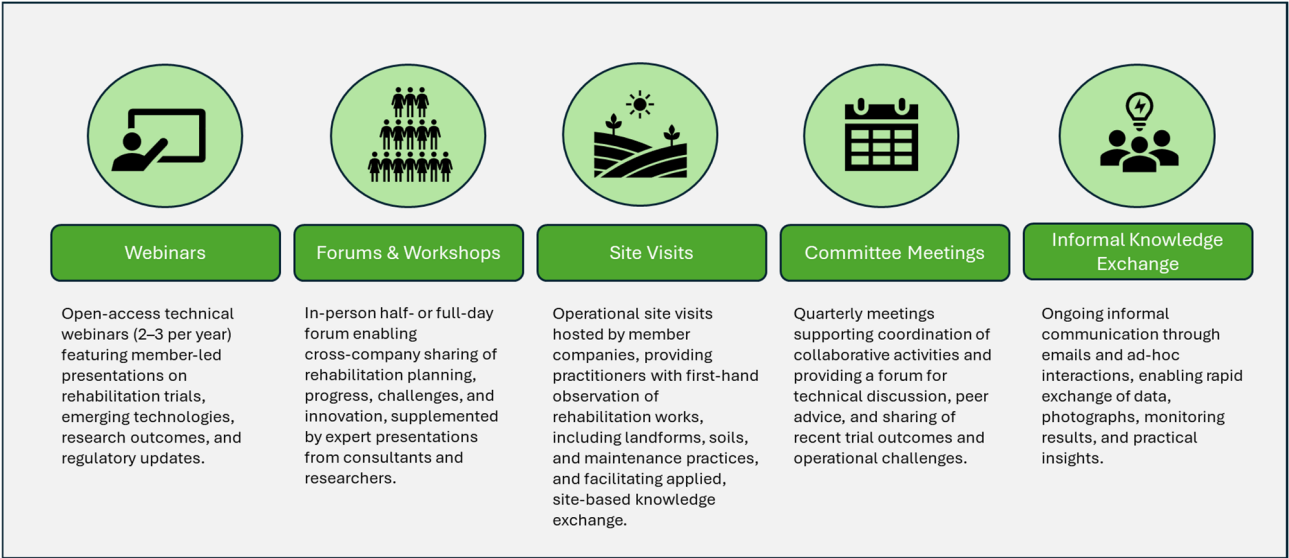


Figure 3 Range of ways the Pilbara Rehabilitation Group contributes to industry knowledge sharing



Figure 4 Pilbara Rehabilitation Group forum events provide a combination of formal and informal opportunities to share knowledge and build practitioner networks



Figure 5 Site visits provide the opportunity to observe rehabilitation operations firsthand, including research plots and field trials

2.3 Project collaboration

Aside from knowledge sharing, the PRG also brings companies together to collaborate on shared projects. By working collectively, member companies avoid duplicating effort, gain access to a wider pool of technical expertise and accelerate the uptake of methods that have been demonstrated to work across different

Pilbara settings. This is particularly valuable in rehabilitation, where innovation often requires long time frames, specialist input and a willingness to trial new techniques under variable field conditions.

The group can prioritise common challenges identified through its knowledge-sharing forums and distribute the workload in an efficient, collaborative way. The shared insights that emerge, particularly around what has not worked, allow companies to refine methods before investing significant time and resources, effectively de-risking innovation at a regional scale.

Examples of how this collaboration occurs include:

- pooling resources to explore trial topics of common interest – allowing companies to jointly commission research, field trials or technical assessments that no single site could justify independently
- benchmarking projects led by internal technical specialists through PRG working groups – leveraging the expertise of practitioners within member companies to compare practices, identify strengths and gaps, and develop agreed approaches or guidelines. Importantly, these working groups operate independently of the committee and may contain practitioners who are not committee members
- peer validation of results – providing a forum where trial outcomes and monitoring data can be reviewed by other practitioners, giving companies the confidence to adopt proven methods and adapt them to their own landforms or operational constraints.

2.4 Challenges

While the PRG is an open and supportive industry group it does experience these summarised challenges:

- resourcing. The group and committee members provide support as an extension to their core business roles and resourcing can be challenging. Finding time and volunteers to contribute to the running of the group, planning and facilitating events, and managing projects requires the right people who are dedicated and passionate about the cause. Succession planning is key to ensuring the ongoing success of the group
- collaboration projects. Dedicated resourcing, similar to the above point, is required. Priority must be given to a critical few and the project assigned to a subgroup or working group to progress resourcing that enables success
- location. The group's base locations are vast. Some members are in the capital city of Perth and others are located in the Pilbara region and on rosters. Forward planning of committee meetings and flexibility to have in-person or online attendance has enabled increased participation
- procurement and contractor engagement. Barriers include the variation in each company's internal terms and conditions, procurement processes and contractual requirements. When external technical support, research partners or contractors are needed, each company must raise its own purchase order, often with different commercial, legal or safety obligations. Aligning these requirements can be time consuming and complex, sometimes delaying project commencement or limiting the feasibility of combined procurement. The group has explored options such as shared scopes, coordinated timing and more flexible contracting approaches
- competition and anti-trust considerations. As an industry forum involving multiple operators, the PRG must maintain clear boundaries around the type of information shared and the scope of collaborative activity. Establishing and updating the Terms of Reference has been important in setting expectations, reducing risk and providing members with confidence that engagement occurs within appropriate competition law parameters.

3 Collaboration in action: Pilbara Rehabilitation Group project examples

The genesis of a collaborative project within the PRG has always come from a shared problem and the willingness of at least one organisation to solve it. Initially the PRG provided input to high-level problems to provide an industry perspective. An example of this is the input of the PRG member companies to the Western Australian Biodiversity Science Institute (WABSI) research priorities (WABSI 2021). In more recent times, the group has pooled resources to jointly investigate and understand synergies and differences with respect to:

- rehabilitation biological completion criteria
- landform design
- erosion completion criteria.

Each of these projects was identified as having a tangible benefit to overall rehabilitation outcomes in the Pilbara, and to aid in discussions with stakeholders on rehabilitation quality and long-term performance.

3.1 Rehabilitation biological completion criteria alignment

Completion criteria that are specific, measurable, achievable, relevant and time-bound (S.M.A.R.T) are essential for applying to rehabilitated sites to enable relinquishment to the state. Members of the PRG identified an opportunity to compare completion criteria across companies and with a view to drafting a common set of criteria that meets the requirements of the mining regulators. The project was strategically set within a common biogeographic region and native title determination, and aimed at identifying opportunities for regional consistency in how rehabilitation success is defined and measured while still allowing site-specific flexibility. The review analysed rehabilitation completion criteria across 11 mine sites operated by 5 PRG companies.

The project is being facilitated through a third party consultant (ERM) and undertaken through a staged, collaborative process. This included combining a desktop review of existing MCPs, completion criteria frameworks and monitoring programs, followed by PRG workshops and interviews with company representatives. Existing criteria from participating sites were analysed against Western Australian regulatory guidance and international mine closure best practice, then grouped into common thematic closure aspects such as vegetation structure, species diversity, ecosystem function and fauna habitat. Using these insights, an amalgamated set of regionally aligned completion criteria designed to be S.M.A.R.T, where appropriate, has been drafted. The aim is for the resulting framework to provide a flexible template that enables individual sites to apply locally relevant targets and reference conditions while maintaining consistency in the overarching approach to rehabilitation assessment and monitoring across the region.

At the time of writing, this work is ongoing. Outcomes of the report will indicate how aligned the group are on completion criteria and whether it may be possible for all companies to adopt a similar set of completion criteria.

3.2 Benchmarking landform design

Landform design is a key component of rehabilitation planning for the Pilbara environment. Many ex-pit landforms consisting of waste rock are very large in terms of their 2D footprint but also their height. A requirement of the DMPE is that landforms are “safe, stable and non-polluting” (DMPE 2025) where pollution can include sediment off the landform. They require demonstration that the final rehabilitation landform design is risk-based, and each company may approach the risk management and design process differently.

All PRG member companies undertook a benchmarking survey to better understand current practices in final landform design for waste rock landforms across Pilbara mining operations. The survey aimed to document

and compare industry approaches to waste rock landform design to identify areas of alignment, variation and shared uncertainty. By mapping each organisation's practices, the exercise provided a collective evidence base that supports knowledge sharing and helps reduce uncertainty in the design of stable post-mining landforms across the Pilbara. This project investigated the approach that member companies take to their design process through the provision of a survey to collect information on:

- methods for material characterisation
- predictive modelling method(s) used
- landform design types (e.g. berm and bench, concave, geomorphic etc.) and some of their key measurements (e.g. slope angles, lift heights, berm widths etc.)
- surface water controls
- design life
- maximum rainfall design
- whether climate change is considered in the modelling
- rehabilitation surface treatments.

Responses were analysed to identify common practices and emerging approaches, such as the widespread use of berm and bench waste rock landforms, examples of concave or geomorphic designs, and varied approaches to modelling, climate change considerations and rehabilitation surface treatments. The survey also highlighted opportunities for deeper collaboration, including sharing erosion and geological data, comparing design parameter selection methods, and co-developing frameworks for risk-based landform design and closure rainfall standards.

3.3 Erosion completion criteria alignment

Following the landform design survey, a project was initiated to understand erosion completion criteria and monitoring methods used by companies to determine the stability of their landforms. Like the rehabilitation biological completion criteria project, opportunities for alignment with rehabilitation erosion completion criteria within the Pilbara region were identified. The importance of landform stability to long-term closure outcomes is a key message from regulators. It is therefore important for PRG companies to develop suitable completion criteria that demonstrate that the landforms, particularly the large waste rock landforms, will not pose a long-term residual risk to the state government. However, the nature of these large, sloped landforms results in some level of erosion but little guidance on what level of erosion is acceptable.

The purpose of the project is to identify a defensible and regionally aligned approach to erosion completion criteria that could support regulatory acceptance and improve consistency across MCPs. An initial workshop was held with participating member companies, applying the WABSI framework for developing mine site completion criteria (Young et.al. 2019) to guide discussion through the key steps, including defining references, attributes, completion criteria and monitoring approaches. This work compared erosion completion criteria between companies and considered effective monitoring methods to demonstrate landform stability.

This work is ongoing but aims to consider a more standardised approach for developing landform stability completion criteria and monitoring methods for all Pilbara-based companies with large ex-pit waste rock landforms.

4 Tangible benefits

The PRG was formed to facilitate cooperation between mining companies that need to undertake rehabilitation of disturbed land in a challenging environment. The value of cooperation is recognised by members of the PRG as an opportunity to 'do better' and to collectively improve at a faster rate. By sharing

ideas, methods and outcomes, opportunities arise for collective improvement. While rehabilitation and closure activities do have significant costs associated with them, there is a collective belief that no competitive advantage should come from environmental improvement projects such as effective rehabilitation.

The regulatory landscape is evolving around rehabilitation performance requirements, though clear guidance is not always available for resource companies to adhere to. PRG members are working collaboratively to help bridge that gap by comparing notes, sharing research outcomes and looking for ways to not just assist PRG companies to meet regulatory requirements but also to help simplify the regulator workload by looking at ways to develop consistent methods and criteria. The benchmarking of rehabilitation biological completion criteria and erosion completion criteria are examples of where that could happen, though this work is still in progress. The PRG members see that having an agreed set of standard completion criteria could make reviews of closure plans more efficient and further accelerate progress towards improving rehabilitation quality.

While these projects aim to consider the broader regulatory landscape, the real benefit to PRG members to date has been the breaking down of barriers to communication and the willingness to share knowledge and experiences. This has resulted in tangible benefits to companies that can immediately take up a new method or try a new monitoring tool based on years of experience and data from others. This group has provided a place to pose questions on specific problems to see if others have found a solution. The PRG forums have provided sessions where information can be shared, questions can be asked and connections can be made. The rehabilitation industry is quite small in Western Australia, and smaller still for the Pilbara region, where many unknowns still exist. These avenues for knowledge sharing and discussion outside individual organisations provide peace of mind that others are also seeking answers to the same questions, or that someone has started answering them. It builds technical expertise, professional networks and efficient ways of working across all companies. Importantly, it also provides visibility of the Pilbara rehabilitation challenges and successes across the industry and offers opportunities to build linkages with academia.

However, maintaining the PRG does have its challenges. The group, and particularly the committee members, must allocate time to facilitate the meetings and events as an extension of their core business roles. To maintain the momentum of the group, dedicated and passionate members are required, and a level of support from their leaders is crucial. Working collaboratively on projects is made difficult with any data sharing due to different commercial, legal or safety obligations. Companies' sites are often widely spread geographically, with different teams having city-based staff and/or site-based rosters, making face-to-face meetings difficult at times.

Despite these challenges, the PRG is flourishing and making a positive impact to quality outcomes for Pilbara rehabilitation. The amount and quality of interactions is increasing, particularly over the last 2 to 3 years following formalisation of the committee and the updated Terms of Reference. The PRG provides a unique example of how resource companies can come together to tackle a common goal, recognising no commercial benefit should be sought when it comes to improving rehabilitation outcomes. The success or failure of this model depends on the willingness of senior leadership to support active participation, and for passionate and dedicated people to step forward and create opportunities for broader participation.

5 Conclusion

The Pilbara Rehabilitation Group (PRG) has shown that when operators facing the same rehabilitation challenges come together and share openly, the whole industry improves faster. Benefits that started with small, practical exchanges – a better ripping approach here, a seed dormancy treatment there – have grown into collaborative projects with the potential to shape best practice across the Pilbara. That progression, from informal conversation to coordinated industry action, reflects what becomes possible when trust is built through consistent, confidential knowledge sharing over time.

While the group relies on voluntary participation and faces challenges associated with resourcing, coordination and differing corporate processes, its continued growth demonstrates the value of

practitioner-led collaboration. The experience of the PRG shows that when operators share knowledge and resources to address common rehabilitation challenges, improvements in technical practice can occur more rapidly and at a broader landscape scale.

The PRG is not the first regional practitioner group in Australian mining. What the PRG adds to that tradition is a deliberate structural model, industry-only membership, confidentiality provisions and open access regardless of company size; these create the conditions for candid peer exchange that can produce real operational change. Mining regions elsewhere facing comparable constraints, small practitioner pools, limited applicable guidance and operators working the same landscape could adapt this model to their own context.

As mine closure expectations continue to evolve, regional practitioner networks such as the PRG offer a practical pathway for industry to collectively build knowledge, improve consistency in rehabilitation approaches and support the development of scalable solutions that can be adapted to other mining regions facing similar challenges.

Acknowledgement

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The authors thank the members of the PRG, past and present, for their continued collaboration and commitment to improving rehabilitation outcomes across the Pilbara region. The willingness of practitioners to openly share experiences, both successes and failures, is what makes the group valuable and this paper possible.

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