

Rio Tinto and biodiversity

Group biodiversity profile

RIO TINTO

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Introduction

At the end of 2007¹, Rio Tinto's total operational land holding was 36,852 square kilometres. The purpose of this document is to profile the Group's biodiversity footprint (as of the end of 2007) and to give an overview of our Group biodiversity values assessment protocol.

Rio Tinto's biodiversity strategy sets out a goal of having a "net positive impact" (NPI) on biodiversity. This means minimising the impacts of our business and contributing to biodiversity conservation to ensure a region ultimately benefits as a result of our presence.

Group biodiversity profile

Assessing Rio Tinto's interaction with biodiversity and the size of our biodiversity footprint is an important first step in reaching our NPI goal.

Rio Tinto collects data on a range of environmental issues in our annual internal social and environment survey.

The survey is used to evaluate performance across the Group on a range of issues, such as biodiversity and water management, safety and occupational health, through to greenhouse gas emissions and product stewardship.

Data is used to assess our performance against our targets and standards, as well as to report externally. Our reporting framework supports the Global Reporting Initiative (GRI) and is influenced by internal and external feedback, as well as various compliance issues resulting from legal and regulatory requirements and voluntary agreements.

In addition to these reporting processes, we have assessed our biodiversity profile with the Group biodiversity values assessment protocol. The protocol was developed in 2007 to assess the biodiversity values of Rio Tinto's land holdings and surrounding areas to help prioritise action. The protocol assesses operations' biodiversity values based on:

- Land in proximity to biodiversity-rich habitats.
- Species of conservation significance.
- Additional site-specific biodiversity values and/or threats.
- The external conservation context.

Grouping operations on this basis into "very high", "high", "medium" and "low" biodiversity value groupings enables resources and action planning assistance to be given to our highest priority operations.

The assessment is independent of any management intervention and, as such, a "high" biodiversity grouping should not be viewed as a commentary on the management of biodiversity at an operation.

¹ This data was collected before the completion of the Rio Tinto acquisition and integration of the Alcan group of operations and therefore does not record the landholding data for the former Alcan sites that are now part of the Rio Tinto Group.

Methodology

Data for input into the biodiversity values assessment protocol was collected as part of our 2007 social and environmental survey data collection process. The data provided by operations was then used to calculate the scores for seven different categories (*Figure 01*). These scores are multiplied by a weighting for the individual category. This weighting reflects the relative significance of the category to the overall score.

The sum of the weighted scores was then used to classify the site as having “very high”, “high”, “medium” and “low” biodiversity values, based on the demarcation of scores shown in (*Figure 01*). Operations with “very high” and “high” biodiversity values have the potential to have a significant impact on these biodiversity values, and resources and action planning are channelled first to these operations.

Figure 01
Calculation of biodiversity rankings

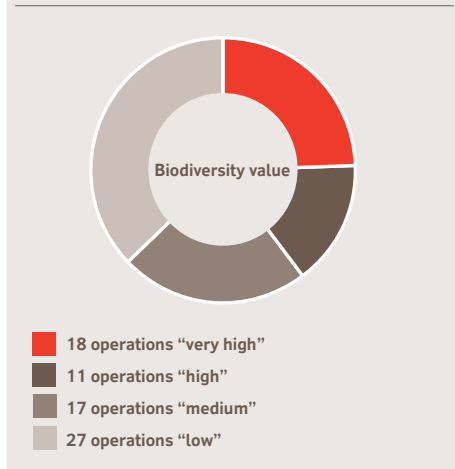
	Interaction with protected areas	Interaction with sensitive habitat	Species of conservation value	Site specific context	Conservation maturity			Score	Ranking	Key
					Knowledge	Status of conservation planning	Capacity			
Weighting	10 32%	8 26%	5 16%	5 16%	1 3.3%	1 3.3%	1 3.3%	31 100%		
Site										Scores
Site 1	3	0	3	2	3	3	3	64	Very High	Very High >50
Site 2	0	3	2	2	1	1	1	47	High	High 40-49
Site 3	0	1	2	1	1	3	2	29	Medium	Medium 25-39
Site 4	0	0	0	1	1	1	1	8	Low	Low <24

The biodiversity values profile

In 2007, all Rio Tinto operations included in the social and environment survey were included in the biodiversity values assessment. Of the 73 operations assessed, 29 (40 per cent) were associated with having “very high” or “high” biodiversity values, 17 with “medium” biodiversity values and 27 with “low” values (*Figure 02*).

Regional exploration groups were not included in the 2007 values assessment. Development projects are only included in the values assessment once an advanced stage in the project cycle has been reached. Rio Tinto is working to integrate biodiversity risk assessment and management planning into project decision making at all stages of the project cycle, to ensure an early and proper understanding of risks and opportunities for biodiversity conservation and protection is achieved.

Figure 02
Results from Rio Tinto’s Groupwide biodiversity values assessment



Land in proximity to biodiversity-rich habitats

The biodiversity values assessment examined operations' proximity to biodiversity-rich habitats (BRH)² including protected areas and sensitive habitats. Risk was assessed on both the BRH's proximity and level of conservation significance. The effect of distance between the operation and BRH can differ from operation to operation, depending on the nature of the possible impacts, the sensitivity of the biodiversity-rich habitats and the nature of the intervening land areas. Based on advice from conservation experts, 10km was selected as a "threshold" to apply for Groupwide analysis.

For protected areas, the highest score was given to those operations that:

- Partially or completely overlap, or are adjacent to, UNESCO World Heritage Conventions Sites, and/or
- Partially or completely overlap with nationally protected areas (registered with the World Conservation Union and managed in accordance with IUCN categories I and II) and sites of global significance recognised by international biodiversity conventions (the Convention on Wetland of International Importance (Ramsar) and UNESCO Man and Biosphere Reserves Programme).

A "high" score was given to those operations that partially or completely overlap with sensitive habitats such as BirdLife International's Important Bird Areas, Alliance for Zero Extinction sites, Important Plant Areas, Natura 2000 sites, and nationally or state threatened ecological communities or critical habitats.

Twenty two per cent (8,158km²) of Rio Tinto's total operational land holding (excluding land held by Rio Tinto Exploration) is within 10km of a BRH. The majority of our land in close proximity to BRH is passively managed (73 per cent; 5,989km²), with only 12 per cent (944km²) used, disturbed or rehabilitated for mining, processing and exploration activities.

² The list of BRH included in the survey was based on those included in the Global Reporting Initiative (GRI), plus additional ones recommended by biodiversity specialists and NGO partner representatives.

Biodiversity surveys and assessments

Species of conservation significance

This category records the presence or potential presence of species of conservation value. Species level data is collected through actual recordings or through habitats or lifecycle dependency on areas within an operation's land holding.

The biodiversity values assessment reviews **extinction threat** and **endemicity**, when identifying species of conservation significance at an operational level.

- The **extinction threat** facing a species. This is the system used by IUCN and for the creation of most national lists. The system follows the rationale that species threatened with extinction are “high” conservation priorities because there is limited time to take conservation action before they may become extinct.

- **Endemicity** – a measure of the spatial distribution of the species. If a species is known only from one site (a site endemic), losing this site would result in species extinction. The measure follows the rationale that species with only localised geographical distributions are “high” conservation priorities because there are few or no other places where conservation action can be taken for them. There is no universally accepted system for classifying species based on their endemism, largely because the significance of this varies with the ecology of the species.

Undertaking additional assessments.

Ninety three per cent of operations (66) have carried out biodiversity assessments at some stage in their project lifecycle. Sixty nine per cent of operations (49) have carried out biodiversity assessments additional to those undertaken as a requirement for environmental impact assessment procedures.

Reasons for undertaking additional assessment include:

- Obtain baseline data
- Improve baseline data/knowledge
- Increase knowledge of priority biodiversity features and/or features under threat.

Of the 29 operations with “high” or “very high” overall biodiversity values, 21 undertook biodiversity assessments as part of a Social Environmental Impact Assessment (SEIA) process and 22 have undertaken additional assessments (subsequent to the SEIA process).

Fifteen of these “high” biodiversity operations carried out additional assessments to improve baseline data/knowledge, and nine operations conducted assessments to increase knowledge of priority biodiversity features and/or features under threat. Developing this additional understanding, over and above regulatory requirements, can help avoid potential risks that would otherwise not be identified.

Table 01

Species of conservation significance with habitats or lifecycle dependency on areas within Rio Tinto land holdings

	Number of operations	Number of species
	48 (58)	395 (587)
High value		
<ul style="list-style-type: none"> • Critically endangered/endangered species (IUCN or nationally listed); and • Site/local endemics 	27 (37)	208 (288)
Medium value	37 (50)	121 (217)
<ul style="list-style-type: none"> • Threatened or vulnerable species (IUCN or nationally listed); and • Restricted range species 		
Low value	26 (28)	67 (85)
<ul style="list-style-type: none"> • Near threatened or conservation dependant species (IUCN or nationally listed); and • National listed serious decline (NZ), gradual decline (NZ), special concern (Canada), and rare (South Africa) 		

The number inside the brackets is the number of species that could be present on the land holdings and the number of operations at which these species occur. The number outside the brackets is the total number of species of conservation value that have been recorded as having habitats or lifecycle dependency on areas within the land holdings, and the number of operations at which these species occur.

Identifying significant species

To identify plant and animal species of conservation significance, Rio Tinto uses a biodiversity values assessment and prioritisation process to determine how

irreplaceable (endemic) and threatened species are at the local, regional national and global level.

Of the 587 species of conservation significance reported to have habitats or lifecycle dependency on areas within Rio Tinto's land holdings, 67 per cent have been confirmed to be actually present (Table 01).

The remaining 33 per cent are predicted to be present based on the existing habitat types and results from other regional assessments. Sixty three per cent of the recorded species of "high" conservation value are flora or invertebrates.

A total of 208 globally or nationally critically endangered/endangered species or locally endemic species have been recorded over 27 operations. Seventy per cent (146) of these are found at QIT Madagascar Minerals (QMM) where there are 129 locally endemic species. It should be noted that the number of species recorded by an operation is an indication of the richness of species in that area, but may also reflect the amount of work done to evaluate its biodiversity values.

The presence of species of "high" conservation significance can present an opportunity for an operation. QMM, for example, is contributing to the conservation of many species. *Eligmocarpus cynometroides*, a site endemic, was down to 25 individual plants in the wild. In 2005, QMM worked

with the Millennium Seed Bank Project at Royal Botanic Gardens, Kew to improve the seed germination success of this species.

Additional site specific context

This category was incorporated into the biodiversity values assessment based on feedback from our operations that there may be issues that are not captured in the other categories of the assessment as they are unique to the operation or project.

These may represent additional external threats to biodiversity or site specific issues with "high" biodiversity value. Examples of an external threat may be the socio-economic situation of the region where the operation is located. Areas that have significant poverty, high population levels, low levels of education and a reliance on non sustainable use of environmental services are less likely to have successful biodiversity programmes in the long term without intervention programmes.

Additionally, other external factors could influence the success of biodiversity programmes, such as land pressure from other sources in the surrounding area and common natural events such as fire and flooding. Examples of site specific values may be that the area surrounding the operation is an especially important part of the regional watershed or the area has significant cultural values.

Nine operations ranked their additional site specific context as being of “high” significance on the basis of:

- The existence of biodiversity values in the form of species of state conservation value and the presence of ecosystem services (provisioning, supporting, cultural and regulating).
- Threats to biodiversity in the form of feral and exotic species, human altered regimes of fire and flood, and cumulative impacts on natural resources by competing land uses.

External conservation context

The external conservation context can underpin the success of conservation efforts. The conservation context, which is independent of any knowledge and capacity of the operation itself, includes three inter-linked factors:

- The status of knowledge of ecosystems and species
- The status of conservation planning
- The capacity of conservation organisations to influence biodiversity outcomes.

Rio Tinto has traditionally worked in areas of high conservation maturity such as Australia, North America and Europe. In these areas, regulatory requirements are stringent, regional knowledge of ecosystems and species is high and there are a number of well developed conservation organisations. Expectations from government and stakeholders are high in these circumstances and demonstrating a proactive strategy to managing biodiversity can have a number of benefits in such situations.

However, increasingly, new projects are situated in areas of low conservation maturity, where biodiversity may be at a greater risk of being impacted without the rigour of legislation and/or the protection of conservation groups. In these areas, Rio Tinto needs to carry out research and work with our stakeholders to develop our own best practices in relation to conservation actions, even though these may not be required legally. This can deliver value for Rio Tinto by conveying a leadership position, improving access to land and providing shorter and less contentious permitting cycles. For example, in Madagascar, we have contributed significantly to the knowledge base of the area in relation to the littoral forest. Eleven operations are situated in regions where either the status of knowledge of ecosystems and species, conservation planning and/or the capacity of conservation organisations were considered to be in an embryonic stage of development.

Conclusion

The annual social and environmental survey and the Group biodiversity values assessment protocol are both important tools in Rio Tinto's overall environmental and biodiversity management frameworks. From a biodiversity strategy perspective, they have provided managers with a basic understanding of the size and location of the biodiversity issue within the Group. With this information we are now able to focus our actions in the areas of highest biodiversity risk and opportunities.

Also in this series:

Rio Tinto and biodiversity – Achieving results on the ground

Rio Tinto and biodiversity – Biodiversity offset design

Case studies:

- *The BirdLife International – Rio Tinto Partnership*
- *The Conservation International – Rio Tinto Partnership*
- *The Earthwatch Institute – Rio Tinto Partnership*
- *Fauna & Flora International – Rio Tinto Partnership*
- *Royal Botanic Gardens, Kew – Rio Tinto Partnership*
- *Protecting biodiversity at Great Salt Lake – On the ground at Kennecott Utah Copper*
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