

ESIA Appendix 1

Oyu Tolgoi LLC Biodiversity Strategy

The Strategy at a glance

Oyu Tolgoi LLC Biodiversity goal

Oyu Tolgoi seeks to ensure that the biodiversity of the southern Gobi region ultimately benefits from the project's presence in the region. In keeping with the Rio Tinto corporate Biodiversity Strategy, Oyu Tolgoi's goal is to have a net positive impact on biodiversity of the southern Gobi region. Oyu Tolgoi aims to reach this goal by mine closure but will seek opportunities to achieve net positive impact as early as practicable in the project life.

The business case for a biodiversity strategy at Oyu Tolgoi and the associated commitment to Net Positive Impact includes the following considerations:

- **Rio Tinto Biodiversity Strategy** The Oyu Tolgoi approach to biodiversity is a southern Gobi region- and project-specific adaptation of the global Rio Tinto biodiversity strategy which has at its core a commitment to Net Positive Impact.
- **Finance.** A significant proportion of the Oyu Tolgoi project finance comes from three development banks, all of which are applying rigorous performance standards concerning biodiversity.
- **Access to land and mineral resources** Leading practice biodiversity management offers an opportunity to differentiate Rio Tinto/Oyu Tolgoi from its competitors and is an important component of Oyu Tolgoi's social 'licence to operate'.
- **Mongolian Government Biodiversity Policy** Mongolian government policy and legislation reflects the need to balance economic development through mineral extraction with the need to manage and conserve the nation's natural values.

To achieve its goal of Net Positive Impact on biodiversity Oyu Tolgoi LLC will:

- Identify important biodiversity features (Priority Biodiversity Features) of relevance to the operation and the project-related threats to these biodiversity features.
- Apply the mitigation hierarchy to avoid, minimise and rehabilitate projected-related impacts to biodiversity.
- Develop a Biodiversity Offsets Plan and identify Additional Conservation Actions (ACAs) that will, over time, compensate for the residual impacts of the project on biodiversity of the southern Gobi region.
- Develop a Monitoring and Evaluation program which is capable of tracking Oyu Tolgoi's journey towards NPI by quantifying the residual impacts (pressures) on

biodiversity features, the state of biodiversity features and the adequacy of management responses.

- Facilitate the development, testing and implementation of tools to track and verify the project's journey towards NPI.
- Ensure that mitigation and offset objectives, actions and targets are clearly defined within the operations Biodiversity Action Plan (BAP) and that the BAP is integrated into the Oyu Tolgoi Environment Management System.
- Seek to capitalise on its position as a regional industry leader in order to minimise the cumulative impacts of mining developments on biodiversity of the southern Gobi region region.
- Engage and consult with biodiversity stakeholders at all stages of the project and build cross-sector partnerships with local communities, various levels of Mongolian government, non-government organisations and academic institutions.
- Ensure that the Oyu Tolgoi Biodiversity Strategy is communicated to and aligned with all other Oyu Tolgoi environmental and social/community strategies.

Oyu Tolgoi LLC Biodiversity Strategy

The Strategy in detail

This strategy outlines the approach the Oyu Tolgoi LLC project will take to achieve Net Positive Impact on biodiversity in the southern Gobi region of Mongolia. The core of the strategy comprises approaches to measuring, mitigating, offsetting and evaluating impacts on biodiversity. Furthermore, an approach to biodiversity partnerships and relationships with Government bodies and civil society stakeholders is also outlined.

The strategy outlines Oyu Tolgoi's commitment to biodiversity management and conservation through a Net Positive Impact goal. The strategy also discusses Oyu Tolgoi's aspirations to use the extensive Rio Tinto biodiversity toolkit and expertise to work with key stakeholder to deliver regional sustainable development benefits.

1. Background

1.1. The Rio Tinto Biodiversity Strategy

Rio Tinto announced a leading-edge biodiversity strategy in 2004 at the global IUCN World Conservation Congress, making a corporate commitment to a Net Positive Impact on biodiversity. This policy goal was reaffirmed by the Rio Tinto CEO Tom Albanese in 2008 and 2010.

Rio Tinto regards managing biodiversity risk as critical in maintaining and potentially enhancing access to new land and resources by demonstrating that Rio Tinto operations can be operated in a way that delivers both mineral resource and biodiversity conservation value and benefits. The business case extends to access to capital and insurance; access to markets for products; access to human capital; and obtaining a seat at the rapidly developing global and national policy tables. The Oyu Tolgoi approach to biodiversity management is a southern Gobi- and project-specific adaptation of the globally generic Rio Tinto biodiversity strategy. Therefore the core of this Rio Tinto strategy is quoted here for reference.

Rio Tinto (2004, 2008) made the following position statement on biodiversity

“Rio Tinto recognizes that conservation and responsible management of biodiversity are important business and societal issues. Our goal is to have a net positive impact on biodiversity”

“We are committed to:

- *The identification of biodiversity values impacted by our activities*
- *The prevention, minimization and mitigation of biodiversity risks through the business cycle*
- *Responsible stewardship of the land we manage*
- *The identification and pursuit of biodiversity conservation opportunities*
- *The involvement of communities and other constituencies in our management of biodiversity issues”*

Rio Tinto (2008) elaborated the position statement with a set of principles:

- *Our goal is to have a net positive impact on biodiversity by minimising the negative impacts of our activities and by making appropriate contributions to conservation in the regions in which we operate.*
- *We are committed to the conservation of threatened and endemic species and high priority conservation areas, and support local, national and global conservation initiatives.*
- *We will seek equity and the reconciliation of differing perspectives and ideals in biodiversity decisions and actions.*
- *We will enhance biodiversity outcomes through consultation, constructive relationships, and partnerships with key stakeholders.*
- *We will integrate the identification, evaluation, and management of biodiversity issues into the planning, decision making, and reporting processes throughout the business cycle.*
- *We will apply appropriate expertise and resources to biodiversity issues, building internal and external capacity where necessary.*
- *Subject to appropriate consent, we promote the collection, analysis, and dissemination of biodiversity information and knowledge.*

1.2 Biodiversity within Rio Tinto Standards

Biodiversity is a core component of existing Rio Tinto Standards. Completion of a Biodiversity Action Plan by a business unit is part of the Land Use Stewardship Standard (E9). Rio Tinto has ranked operations globally in terms of their biodiversity value and risk. Those sites ranking High or Very High are mandatorily required to complete a Biodiversity Action Plan by 2015 under the Tier 2 Biodiversity Target. Oyu Tolgoi has not yet been formally ranked, however a cursory assessment (TBC unpubl. data) indicates the operation counts amongst these higher priority Rio Tinto operations for biodiversity.

1.3 Oyu Tolgoi Business Case for a biodiversity strategy

The business case for a biodiversity strategy at Oyu Tolgoi, and the associated commitments to Net Positive Impact, includes the following considerations:

1.3.1 **Finance.** A significant proportion of the Oyu Tolgoi project finance comes from three development banks, all of which are applying the International Finance Corporation's Performance Standard 6¹ or variations thereof. This performance standard is the most rigorous in existence concerning biodiversity and compliance requires and encourages leading edge biodiversity management, including:

- Identification of Modified, Natural and Critical Habitat.

¹ The Oyu Tolgoi project is required to comply with International Finance Corporation (IFC) *Performance Standard 6 - Biodiversity Conservation and Sustainable Natural Resource Management* as published April 30, 2006

- Design and implementation of mitigation and biodiversity offsets for impacts on Natural and Critical Habitat.
- Creation of partnerships with external stakeholder institutions for effective biodiversity management.
- Monitoring and evaluation of biodiversity gains and losses.

Critical Habitat is a concept within the IFC Performance Standard 6 and is defined as areas with high biodiversity value, including habitat required for the survival of critically endangered or endangered species; areas having special significance for endemic or restricted-range species; sites that are critical for the survival of migratory species; areas supporting globally significant concentrations or numbers of individuals of congregatory species; areas with unique assemblages of species or which are associated with key evolutionary processes or provide key ecosystem services; and areas having biodiversity of significant social, economic or cultural importance to local communities.

The entire Oyu Tolgoi project area of influence is associated with Critical Habitat for a range of biodiversity values. As such, Performance Standard 6 requires the Oyu Tolgoi project to ensure that:

- There is no measurable adverse impacts on the ability of the critical habitat to support established populations of critical habitat-qualifying species or the functions of the critical habitat
- There is no reduction in the population of any recognized critically endangered or endangered species
- Any lesser impacts are mitigated appropriately and in accordance with Performance Standard 6..

1.3.2 **Access to land and mineral resources:** Mongolia is a mineral rich country in which a large number of mining companies are increasingly active. First, to the degree to which Government is concerned about biodiversity issues, access to land and resources in the future will be influenced by past environmental performance. Leading practice biodiversity management therefore offers an opportunity to differentiate Rio Tinto/Oyu Tolgoi from its competitors. Second, to the degree to which local communities and civil society value or have rights over biodiversity or biodiversity-linked natural resources, current and future local social 'licence to operate' will be partly dependent on the sound stewardship of biodiversity, ecosystems and their human-derived services.

1.3.3 **Mongolian Government Biodiversity Policy.** Mongolia is a signatory of most international environmental conventions and is an established part of the mainstream global environmental and conservation community. The Mongolian Government has an active interest in biodiversity conservation with a significant area of land gazetted under protected areas law (13.4%, WDPA 2011). More recently the Mongolian government has made a legislative commitment to conserve 30% of the country (46.9 million ha) in protected areas by 2030. The government is particularly cognisant of the need to balance economic development through mineral extraction with the need to manage and conserve its

significant natural values. The government is thought to be seeking legislative change to manage these tensions and is in discussions with several organisations concerning biodiversity offsets. Although at early stages, these engagements may well evolve into a national biodiversity offset policy. Rio Tinto has taken a leadership role globally on biodiversity offsets and has already developed world-leading best practice technical guidance on biodiversity offsets. The Oyu Tolgoi biodiversity strategy will provide an important case study resource for the Mongolian government as it explores options to strengthen and revise policies and legislation relating to biodiversity management.

1.4 Oyu Tolgoi biodiversity goal

Oyu Tolgoi has developed its biodiversity policy goal. This goal is presented below and references both the spatial and temporal scale of the projects commitment to biodiversity management:

Oyu Tolgoi Biodiversity goal

Oyu Tolgoi seeks to ensure that the biodiversity of the southern Gobi ultimately benefits from the project's presence in the region. In keeping with the Rio Tinto corporate Biodiversity Strategy, Oyu Tolgoi's goal is to have a net positive impact on biodiversity of the southern Gobi region of Mongolia. Oyu Tolgoi aims to reach this goal by mine closure but will seek opportunities to achieve net positive impact as early as practicable in the project life.

2. The Strategy

2.1. Operational Excellence

Operational excellence in biodiversity management follows a set of processes common to all Rio Business Units. Over the past 10 years Rio Tinto has been actively working in partnership with some of the world's leading conservation scientists, organisations and intergovernmental agencies² to develop a set of best practice biodiversity tools and methodologies.

2.1.1. Oyu Tolgoi's approach to prioritising and managing biodiversity features.

Oyu Tolgoi takes a value and risk-based approach to prioritising biodiversity features following the Rio Tinto Biodiversity Action Planning system (Figure 1) to identify the most important biodiversity features of relevance to the operation.

These include:

- **All natural habitats** (unless experts and stakeholders approve removal of the particular habitat from the BAP due to its identified low conservation value).
- **Species of conservation priority** (includes all globally and nationally listed threatened species, restricted range species and priority migratory and congregatory species)
- **Priority ecosystem services and other site values** (including cultural sites and practices [e.g. hunting etc.])
- **Sites of conservation importance** (includes designated sites [e.g. protected areas at IUCN levels I-VI, Ramsar sites, World Heritage Sites, National Nature Reserves, State and Local Nature Reserves] and some undesignated sites [e.g. Key Biodiversity Areas, Important Bird Areas, etc.])

Following the criteria outlined above, priority biodiversity features for the Oyu Tolgoi project will be as diverse as: rare and very rare medicinal plants (important to herder communities around the Oyu Tolgoi mine site and infrastructure); protected areas such as the Small Gobi SPA (high value to the national government); and threatened fauna species such as Asiatic Wild Ass and Houbara Bustard (important to the national, regional and global conservation communities including organisations such as BirdLife International and IUCN).

2.1.2. Oyu Tolgoi's approach to the mitigation hierarchy.

In accordance with the Rio Tinto approach to biodiversity management, Oyu Tolgoi applies the mitigation hierarchy in managing its biodiversity risks and opportunities (Figure 2). This means that opportunities to mitigate impacts on biodiversity are sought through avoidance, minimisation and rehabilitation, in that order. When this hierarchy of mitigation opportunities is exhausted or optimised for biodiversity, the residual impacts are measured and biodiversity offsets and additional conservation actions are sought to bridge the residual gap towards NPI. Oyu Tolgoi defines each of the steps in the mitigation hierarchy, i.e. avoidance, minimisation, rehabilitation, offsets and additional conservation actions as follows:

² Rio Tinto biodiversity program has been a collaborative process involving several of the world's leading conservation NGOs including: Fauna & Flora International; Conservation International; Birdlife International; Royal Botanic Gardens Kew; and the IUCN.

Avoidance:

Avoidance actions are those that either change or stop mining and refining actions before they take place, preventing their expected impacts on biodiversity. Avoidance involves a decision to change the expected or normal course of action.

Minimisation:

Minimisation actions are those that reduce the severity of impacts on biodiversity that result from mining and processing actions already under way. These actions reduce the likelihood or magnitude of biodiversity impacts, but cannot completely prevent them. It can sometimes be difficult to demarcate between avoidance and minimisation because some actions have aspects of both.

Rehabilitation:

Rehabilitation actions involve the preparation of safe and stable landforms on sites that have been disturbed by our activities, followed by re-vegetation with the aim of establishing a specific habitat type. Restoration is different to rehabilitation in that the aim, as far as practicable, is to recreate the original pre-disturbance habitat type. Both rehabilitation and restoration must generate measurable biodiversity value in order to qualify in NPI calculations.

Biodiversity Offsets

Biodiversity offsets are conservation actions designed to compensate for the unavoidable residual impacts on biodiversity caused by a project. Offsets should never be employed in the place of appropriate on-site avoidance and minimisation measures but should be used to address residual gaps. Offsets typically take the form of either 'averted disturbance' of habitat (the offset must demonstrate that the disturbance was inevitable without intervention) or ecological restoration of degraded habitat. Offset actions can be applied within discrete 'offset areas', or if appropriate, more regionally through programmes and policy interventions (such as concerning the control of hunting).

Additional Conservation Actions

Additional Conservation Actions are actions intended to benefit biodiversity (e.g. capacity building and environmental education programs) but which are not considered offsets since their effects or outcomes are often difficult to quantify. Such biodiversity outcomes, while qualitative, will form an essential part of Oyu Tolgoi's contribution to biodiversity conservation in the southern Gobi region.

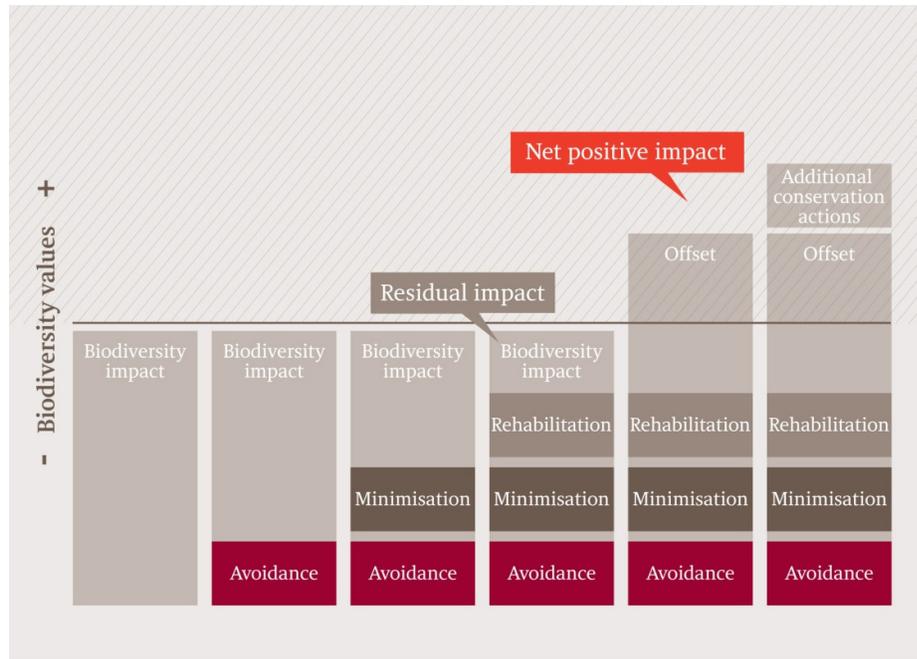


Figure 1: The mitigation hierarchy and how it will be applied throughout the Oyu Tolgoi project life to achieve a Net Positive Impact on biodiversity values (taken from Rio Tinto 2008)

Actions to avoid, minimise and rehabilitate high and critical risk impacts on priority biodiversity features have been identified and discussed within the Oyu Tolgoi project Environmental & Social Impact Assessment (ESIA) process. The ESIA documentation includes mitigation actions that have or are currently being applied during the design and construction phases as well as actions which will be implemented during the operation and closure phases of the project. Construction phase mitigation actions are captured in the Construction Flora and Fauna Management Plan included as part of the ESIA document set.

Rehabilitation and restoration efforts across the Oyu Tolgoi project will be managed under a rehabilitation management plan which will form an integral component of the Oyu Tolgoi Environmental Management System (EMS).

Biodiversity mitigation actions to be implemented during the project operations phase will be captured in detail in the Oyu Tolgoi Biodiversity Action Plan (BAP). The biodiversity specific objectives, targets, actions and accountabilities detailed in the BAP will be integrated with the Oyu Tolgoi Environmental Management System.

The Biodiversity Action Planning process focuses on specific biodiversity issues and the identification of discrete management solutions which mitigate impacts on biodiversity. Because of their scale biodiversity offsets will be developed through a separate but complimentary process (see section 2.1.2) with specific offset actions later integrated into the BAP.

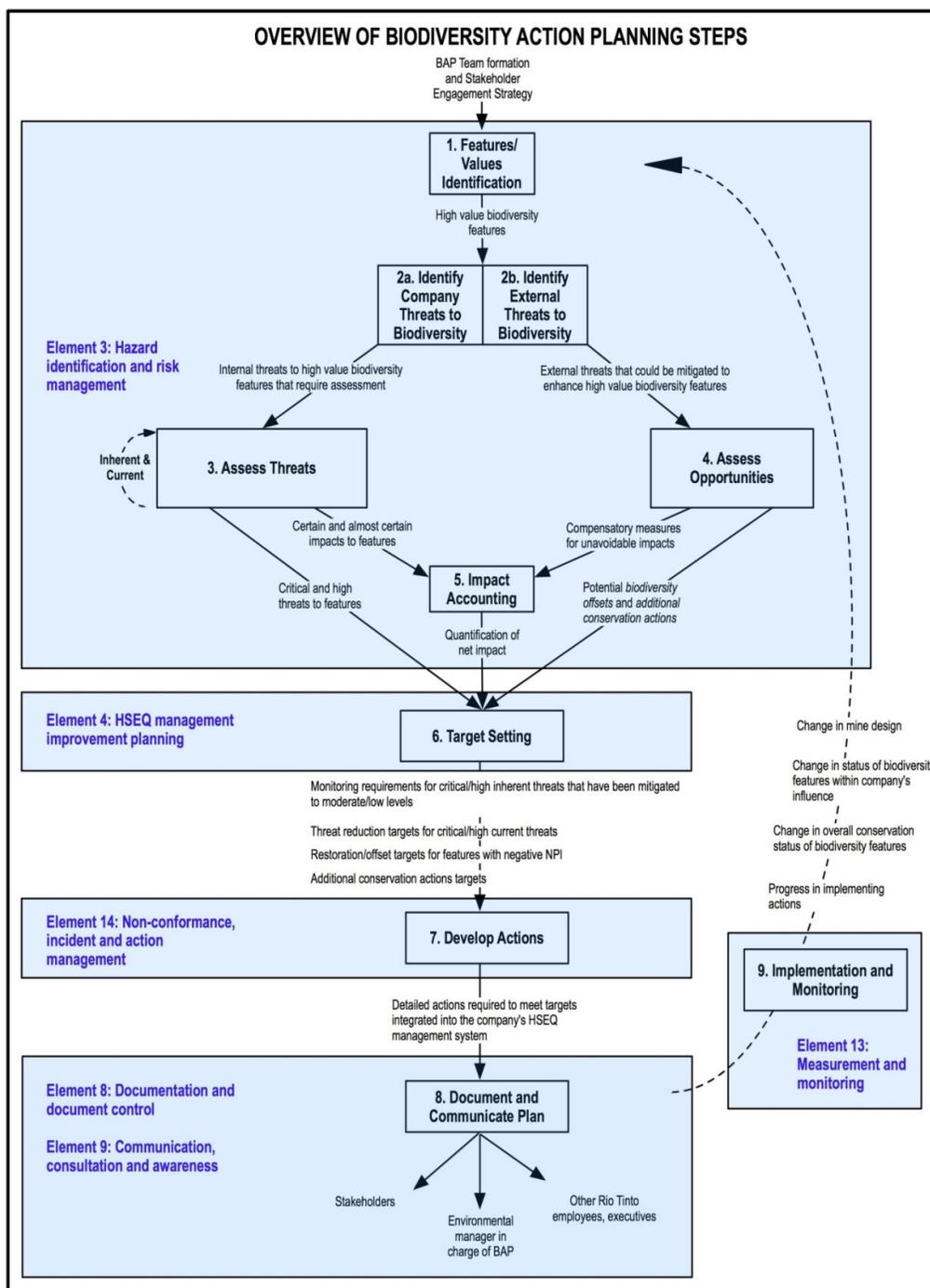


Figure 2: Step-by-step guidance for development of a Biodiversity Action Plan (BAP), presented in nine sequential stages (taken from Rio Tinto 2010a).

2.1.3. Oyu Tolgoi’s approach to biodiversity offsets.

The Oyu Tolgoi project will have residual impacts on biodiversity. The development of an integrated package of offsets and additional conservation actions, will therefore allow Oyu Tolgoi to compensate for project-related residual impacts and achieve its goal of net positive impact on biodiversity.

Oyu Tolgoi, in conjunction with Rio Tinto’s biodiversity partners, regional stakeholders and other biodiversity experts will develop an offsets strategy for the Oyu Tolgoi project. This strategy will, as far as practicable, take a landscape-level approach to biodiversity offsets in the southern Gobi region. The need for a landscape-level approach is due in part to the scale of ecological boundaries within the system, largely because of the inherent ecology of the priority biodiversity features (e.g. nomadic Asiatic Wild Ass).

Oyu Tolgoi will draw on extensive guidance developed by Rio Tinto on the technical issues surrounding the measures of biodiversity losses and gains and the political and stakeholder processes required in setting up biodiversity offsets. This guidance will form the framework for the design and implementation of biodiversity offsets suitable for the Oyu Tolgoi project (see Figure 3).

Concurrently, Rio Tinto is contributing to landscape-scale biodiversity conservation planning in the Gobi region through the provision of financial support to The Nature Conservancy’s (TNC) Gobi Region *Development by Design* Landscape Assessment Project. The aim of the project is to help reduce “*conflicts between development and conservation goals, avoid or offset the impacts of development, and support win-win solutions for the Gobi region*”. This initiative will develop a portfolio of priority conservation areas throughout the Gobi region based on identification of conflicts between conservation and development and application of the mitigation hierarchy at the landscape level. Oyu Tolgoi LLC will work closely with TNC to ensure biodiversity-related information held by Oyu Tolgoi is fed in to TNC’s landscape assessment process and, conversely, that outputs of TNC’s project inform the Oyu Tolgoi biodiversity program in a timely manner.

The Oyu Tolgoi approach to biodiversity offsets will be adaptive; responding where appropriate, to new or updated ecological information and to changes in stakeholder expectations. The results of TNC *Development by Design* program, in particular, are likely to provide new insights and opportunities for the application of biodiversity offsets in the southern Gobi region. By working closely with TNC, Oyu Tolgoi will ensure that the results of the *Development by Design* program are captured and incorporated into Oyu Tolgoi’s ongoing approach to biodiversity offsets.

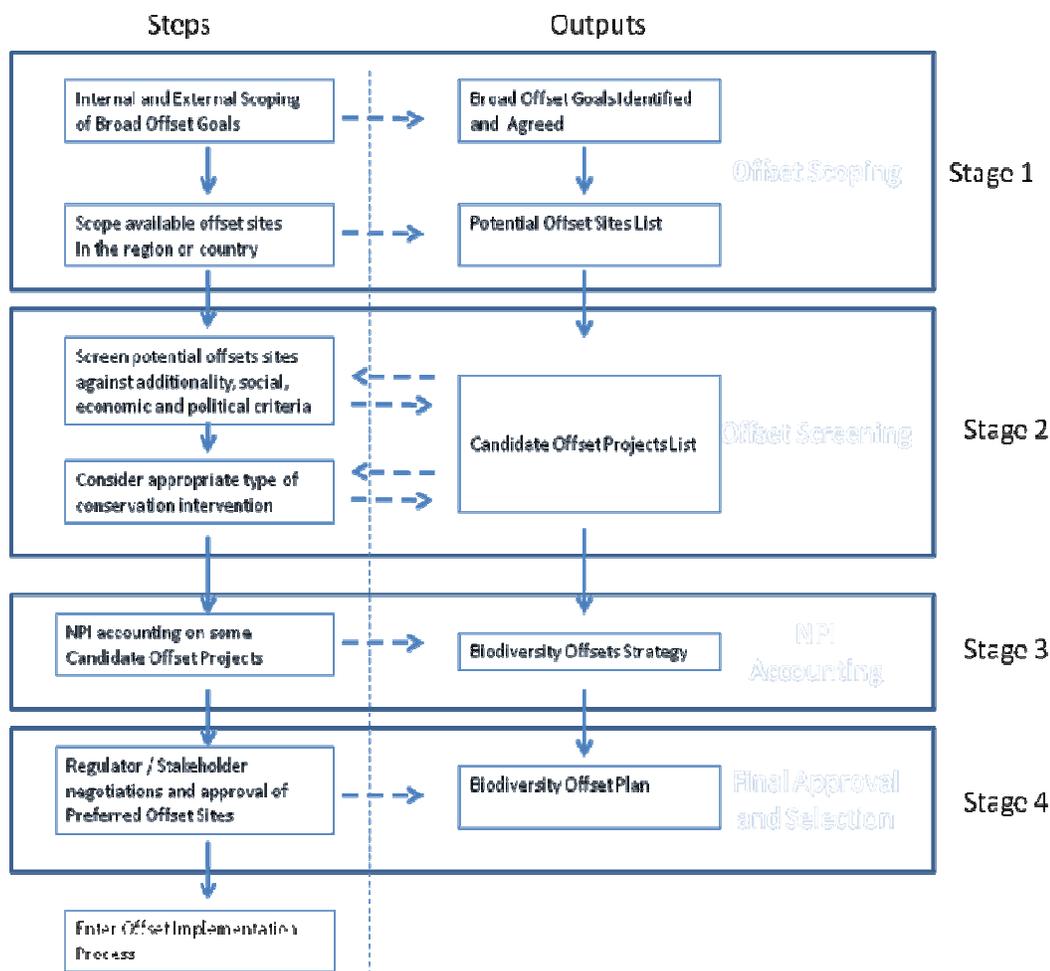


Figure 3. The Steps and Stages of Biodiversity Offset Design. Stages are shown as blue boxes: Offset Scoping, Offset Screening, NPI Accounting, and Final Approval and Selection (taken from Rio Tinto 2010b).

2.1.4. Oyu Tolgoi’s approach to Monitoring and Evaluation.

A well-designed, cost-effective monitoring and evaluation program is essential to inform Oyu Tolgoi’s adaptive approach to biodiversity management. Furthermore, it will fundamentally underpin Oyu Tolgoi’s ability to demonstrate its progress towards the goal of Net Positive Impact to both internal and external stakeholders (see Section 2.1.5 below).

Oyu Tolgoi will draw on guidance from recent Rio Tinto technical publications, from the International Finance Corporation Performance Standard 6 and internal and external experts (academic, government and non-government institutions) to develop an effective monitoring and evaluation program. Oyu Tolgoi will select appropriate methods for measuring and evaluating:

- Projected-related residual impacts on biodiversity
- The adequacy and effectiveness of mitigation actions
- The adequacy and effectiveness of offset actions.

Where appropriate, Oyu Tolgoi will seek out opportunities to coordinate and collaborate with other southern Gobi region biodiversity stakeholders so as to maximise the spatio-temporal breadth and cost-efficiency of its monitoring and evaluation program.

2.1.5. Oyu Tolgoi's approach to Net Positive Impact verification

The IUCN, at the request of - and in collaboration with - Rio Tinto, has convened a Net Positive Impact Protocol & Review Panel Team (NPIP&RPT) that will develop, test and implement an independent process for verification of Rio Tinto's commitment to its NPI objective.

As a project committed to having a net positive impact on biodiversity of the southern Gobi region, Oyu Tolgoi will:

- Where appropriate, facilitate and contribute to the development and testing of NPIP&RPT tools for NPI verification.
- Participate in regular, independent application of these tools (once fully developed) throughout the Oyu Tolgoi project life in order to track the adequacy of Oyu Tolgoi's progress towards NPI and ultimately to verify that Oyu Tolgoi has achieved its NPI goal.

2.1.6. Oyu Tolgoi's approach to Research and Environmental Education.

Where appropriate, Oyu Tolgoi will support research that contributes to the overall understanding of biodiversity and environmental management in the southern Gobi region. Oyu Tolgoi will look to establish working relationships with research institutions to facilitate biodiversity research and promote exchange of knowledge between these institutions and its internal Biodiversity Research Team.

Oyu Tolgoi recognises that environmental education of its staff and contractors is an integral part of mitigating project impacts on biodiversity and will implement and frequently update a range of environmental training and educational initiatives on site. Moreover, Oyu Tolgoi aims to enhance awareness of biodiversity conservation issues in the region by providing environmental training and education opportunities to local communities.

2.2. Risks to the achieving NPI

2.2.1. Regional Leadership.

Biodiversity management of the southern Gobi region requires a regional scale approach due, in part, to the broad landscapes and nomadic habits of many conservation significant species which occur in the region. Efforts to appropriately manage biodiversity will therefore be of limited value if other developers in the region do not (voluntarily or legally) match up to Oyu Tolgoi's high standards. In other words, the cumulative impacts of mining development in the southern Gobi region are predicted to be high (Walton 2010) and it is therefore in Oyu Tolgoi's interest to be a sector and regional leader in managing biodiversity.

Oyu Tolgoi is the largest development project in Mongolia and regarded as a key to the country's economic development. This leadership provides Oyu Tolgoi with the opportunity to position itself as a sector leader within the growing mining industry in Mongolia, and a regional leader within the southern Gobi region. Sustainable development is a cornerstone of Rio Tinto's project development policy and industrial growth model. Environmental sustainability is one aspect of this.

Oyu Tolgoi has taken significant steps to position itself as a sector and regional leader in managing biodiversity and in driving sustainable regional development. Oyu Tolgoi has established a Memorandum of Understanding with Energy Resources LLC which will facilitate cooperation in ecological research and monitoring and promote an integrated approach to biodiversity management. Going forward, Oyu Tolgoi will develop and implement local and regional-level planning and infrastructure initiatives. These initiatives will provide training and resources to assist soum and aimag government better manage infrastructure development, land use and protect natural resources, including biodiversity.

In the future, Oyu Tolgoi plans to facilitate the development of a regional infrastructure biodiversity mitigation plan. This could involve facilitating leadership by the government or other third party, of a consortium of stakeholders to collectively design, manage and measure issues around regional scale infrastructure. Examples include export roads, railways, groundwater use and electricity generation and transmission systems. The most critical issue which has arisen to date is the potential long term impact of the Oyu Tolgoi export road/national highway through the global stronghold of Asiatic Wild Ass.

2.2.2. Strategic Alliances.

Biodiversity is a societal issue, therefore the process of involving stakeholders in decision making around biodiversity is as important as the content of a strategy. Cross-sector partnership with government, NGOs, academic institutions and others is considered essential for the effective design and implementation of the Oyu Tolgoi biodiversity programme. Consultation with local, national and global stakeholders is an important step in sustaining support and ownership of company biodiversity programmes.

There is a strong cultural pride in the environment in Mongolia. The southern Gobi region is essentially economically and culturally sustained by the natural environment: this is because the majority of people and income generation is based on a primary relationship with natural resources. Singular amongst these is herding: historically deep and spatially extensive, the Oyu Tolgoi project is essentially overlaid onto this pre-existing land use. Investment into social and ecological research - facilitated by alignment of the Oyu Tolgoi biodiversity and community strategies - is necessary to better understand this system and its interdependencies.