

SECTION D: ENVIRONMENTAL AND SOCIAL CONSTRUCTION MANAGEMENT PLANS

CHAPTER D6: FLORA AND FAUNA CONSTRUCTION MANAGEMENT PLAN

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6 FLORA AND FAUNA

6.1 INTRODUCTION

This Construction Management Plan for flora and fauna is designed to ensure, through the application of the mitigation hierarchy, the control and limitation of potential impacts within the Project's Area of Influence (Aoi) that are associated with project construction. The Project recognises that there are some aspects of the development where the application of the mitigation hierarchy has not been possible as discussed in *Chapter C6: Biodiversity and Ecosystems Services Impact Assessment*. The plan recognises that some adverse impact will result from the Project's construction activities (roads, transmissions lines, pipeline and works within the Mine Licence Area and sets out a systematic approach to minimise environmental and social impacts through the implementation of good practice procedures across the Project, as identified within the ESIA.

This Plan also details measures for the periodic monitoring of construction related impacts on flora and fauna and the implementation of control measures during the construction phase. It includes measures to minimise the impact to flora and thereby pastureland.

This Plan is complementary to the impact mitigations sections of *Chapter C6: Biodiversity and Ecosystem Services Impact Assessment*, the *Oyu Tolgoi Biodiversity Strategy*¹ (Annex A of *Chapter C6*), the *Biodiversity Impacts and Mitigation Actions*² (Annex B of *Chapter C6*) and the *Biodiversity Offset Strategy for the Oyu Tolgoi Project*³ (Annex C of *Chapter C6*).

6.2 OBJECTIVES

The objectives of this Management Plan are to:

- Outline the Project's obligations with regards to the protection of flora and fauna and thereby the context for this plan;
- Define the operational procedures, controls, mitigation measures for all construction activities with the potential to adversely affect flora and fauna;
- Define roles and responsibilities;
- Define monitoring and reporting procedures;
- Define training requirements; and
- Describe long term actions and the need further research where necessary.

6.3 SCOPE

The Oyu Tolgoi Project is committed to comply with various environmental standards which are managed through a suite of topic specific Management Plans as described in *Chapter D1: Environmental and Social Management Plan (ESMP) Framework*. The ESMP Framework sets out the management framework for Management Plans for the following phases of the Project (see the *Chapter D1: ESMP Framework* for the definition of these phases):

1. Construction Phase
2. Operations Phase

Flora and fauna may be affected to a greater or lesser extent by construction activities within the Mine Licence Area and construction of the Project's roads, airport, borefield and pipeline, and electricity

¹ RBA Appendix 1 Oyu Tolgoi Biodiversity Strategy; Unpublished report of The Biodiversity Consultancy Ltd. and Fauna and Flora International, December 2011

² RBA Appendix 3; Biodiversity Impacts and Mitigation Actions for the Oyu Tolgoi Project; Unpublished report of The Biodiversity Consultancy Ltd. and Fauna & Flora International, December 2011.

³ RBA Appendix 4; Biodiversity Offsets Strategy for the Oyu Tolgoi Project; Unpublished report of The Biodiversity Consultancy Ltd. and Fauna & Flora International, December 2011

infrastructure during the construction phase. More specifically, this management plan is intended to address the control measures required to avoid, minimise and rehabilitate impacts to flora and fauna that might result from:

- Construction activities and excavation works within the Mine Licence Area;
- Hydrologic impacts as a result of pit dewatering and the diversion of ephemeral watercourses; and
- Construction activities/land-take associated with development of the Project infrastructure, including:
 - the development of the Gunii Hooloi bore field and pipeline to the Mine Licence Area;
 - the temporary airport;
 - the proposed permanent airport;
 - the electrical transmission line; and
 - Project roads and existing supply roads utilised by Project traffic.

This Flora and Fauna Construction Management Plan is one of a suite of Construction Phase Management Plans. The plan covers all Construction Phase activities that have the potential to result in impacts to flora and fauna (see *Section 6.4* for further details). However, particular reference is also made here to the following Construction Phase Management Plans that also have direct relevance to the protection flora and fauna:

- *Chapter D11: Transport Construction Management Plan* (animal strikes, fragmentation effects, deposition of vehicle induced dust, use of unapproved roads/tracks);
- *Chapter D3: Noise and Vibration Construction Management Plan* (disturbance to wildlife);
- *Chapter D4: Topsoil Construction Management Plan*;
- *Chapter D7: Water Resources Construction Management Plan* (drawdown and availability of water to sustain plant and animal life);
- *Chapter D8: Waste Construction Management Plan*;
- *Chapter D12: Hazardous Materials and Petroleum Fuels Management Plan*; and
- *Chapter D16: Influx Construction Management Plan*.

Oyu Tolgoi will also develop an Operational Phase Biodiversity Management Plan and an Offset Management Plan to detail long term protection and enhancement measures and to address the long term impacts/monitoring of flora and fauna through the Biodiversity Monitoring and Evaluation Program.

6.4 POTENTIAL IMPACTS

The Project is sited within a fragile environment which supports a number of rare and endangered flora and fauna species both within and outside of protected areas. Construction activities can have numerous and widespread impacts including the following adverse impacts:

- Land take - long term or permanent loss/degradation or modification of habitat from development of the Mine Licence Area, road, water pipeline and bore field and runway construction;
- Vehicle movement – physical impacts to flora from off-road travel/use of unofficial tracks, spread of invasive weeds, dust generation resulting in degradation of flora, noise/human presence (visual) disturbance and/or barriers to migratory wildlife resulting in habitat fragmentation;
- Impacts to water resources, including contamination of water if hazardous materials and wastes are poorly managed, the diversion of ephemeral watercourses and the diversion or drawdown of groundwater affecting availability of water to support animal and plant life;
- Increased incidence of illegal hunting (due to population influx and enhanced access); and
- Increased demand for pastureland and meat (see *Chapter D16: Influx Construction Management Plan*).

The Project will also have the following positive impacts which will be enhanced where possible:

- The Oyu Tolgoi Project has committed to implementing a number of best practice actions to mitigate the potential impacts of fragmentation by improving the connectivity of ungulate populations. Increased traffic volumes, notably along the road upgrade to Gashuun Sukhait, risk creating functional barriers to some animals, notably ungulates which are hunted (and hence wary of vehicles). The Oyu Tolgoi Project is committed to demonstrating best practice to mitigate the impacts of fragmentation and indirect habitat loss, and improve connectivity, between these roads, and to play a leading role in facilitating higher regional standards of infrastructure mitigation. Research opportunities including improved knowledge of flora and fauna in the region and as part of rangeland health monitoring.

All of the above impacts, either in isolation or combination, have the potential to affect the habitats and/or individual species, including adverse impacts to protected habitat (the Small Gobi Strictly Protected Area (SGSPA)), important habitat (Galba Gobi Important Bird Area (IBA)) and rare and endangered species⁴ such as the houbara bustard (*Chlamydotis undulata*), the endangered Asiatic Wild Ass (*Equus hemionus hemionus*) and Saker falcon (*Falco cherrug*). Specific measures to reduce or eliminate these impacts are provided in *Section 6.10: Mitigation Measures and Management Controls*.

6.5 PROJECT STANDARDS AND OTHER REQUIREMENTS

The following standards for the management of flora and fauna are applicable to all Project activities

6.5.1 Mongolian legislation

- **Law on Fauna** (*In force on May 5, 2000*): The purpose of this Law is to regulate the protection and breeding of terrestrial and aquatic fauna. This law includes provisions addressing limits on fauna use; the recording of rare and endangered species listed in the IUCN Red Book; the protection of natural habitats and migration routes; the establishment of game reserves; and stock enhancement and repopulation.
- **Law on Natural Plants** (*In force June 5, 1995*): The purpose of this law is to regulate the proper use, protection and restoration of natural plants other than forests and cultivated plants. There is a corresponding law on Natural Plant Use Fees, which sets fees for the use of very rare, rare and abundant plants. Fees are payable to the *soum* and district upon the issuance of a licence.
- **Law on Special Protected Areas** (*in force on April 1, 1995*): regulates the designation, management and use of land falling within Special Protected Areas. Special Protected Areas fall into the following four categories: 'strictly protected areas'; 'national parks', 'nature reserves' and 'historic monuments'. All of these protected areas are the responsibility of the national Ministry of Nature and Environment.
- **Law on Buffer Zones** (*in force 23 October, 1997*): Buffer Zones are established around Strictly Protected Areas and National Parks and may also be established around nature reserves and national monuments. Buffer Zones shall consist of "those areas established to minimise, eliminate and prevent actual and potential adverse impacts to Strictly Protected Areas and National Parks, to increase public participation, to secure their livelihood and to establish requirements for the proper use of natural resources"⁵.
- **The Mongolian Law on Hunting, 1995**, regulates the protection and proper use of hunting reserve.

6.5.2 Nationally Protected Areas

Parts A and B of the SGSPA located approximately 80 km south of the Oyu Tolgoi Licence Area are designated as Category Ib Wilderness Areas under the IUCN designation. The road and power line from

⁴ A full list of rare and endangered species is provided in *Chapter C6: Biodiversity and Ecosystems Services Impact Assessment*.

⁵ Law of Mongolia on Buffer Zones October 23, 1997. Ulaanbaatar City, Chapter One, General Provisions.

the Mine Licence Area to Gashuun Sukhait on the Chinese border transects the top south west edge of the SGSPA (Part B).

Within Omnogovi *aimag*, State Special Protected Areas comprise 3,490,894 ha (21.1% of the total area). This consists of, 1 Strictly Protected Area (the SGSPA); 1 National Park (the Gobi Gurvan Saikhan National Park); and 1 National Reserve (the Zagyn Us Nature Reserve).

6.5.3 Internationally Recognised Areas

The Galba Gobi IBA, encompassing lands in Parts A and B of the SGSPA, will also be traversed by the Oyu Tolgoi infrastructure corridor. The IBA is not formally recognised by Government of Mongolia, and therefore has no legal protection or status in Mongolia, but is recognised internationally by the conservation community⁶. Nevertheless this area supports important breeding populations of three globally threatened bird species (Saker Falcon (*Falco cherrug*), Houbara Bustard (*Chlamydotis undulata*) and the Lesser Kestrel (*Falco naumanni*), all considered species of significant conservation interest by IUCN⁷.

6.5.4 International Conventions

At the international level, Mongolia is party to several multilateral environmental agreements and protocols regarding the protection of habitats and flora species. These are listed below:

- *The Convention on the Conservation of Migratory Species of Wild Animals ('CMS') (In force November 1, 1983);*
- *Memorandum of Understanding concerning the Conservation of Migratory Birds of Prey in Africa and Eurasia (In force November 1, 2008);*
- *Memorandum of Understanding concerning the conservation of the Saiga Antelope (In force September 24, 2006);*
- *International Convention to Combat Desertification (In force December 26, 1996);*
- *Convention on Biological Diversity (CBD) (In force December 29, 1993);*
- *Convention on International Trade in Endangered Species (CITES) (March 1973); and*
- *Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1979, came into force on June 1, 1982.*

6.6 INTERNATIONAL REQUIREMENTS & GUIDELINES ON BIODIVERSITY

IFC Performance Standard (PS) 6 includes an assessment of the significance of Project impacts on all levels of biodiversity as an integral part of the social and environmental assessment process, with a focus on major threats to biodiversity including habitat destruction and invasive alien species. This Performance Standard reflects the objectives of the Convention on Biological Diversity to conserve biological diversity and promote the use of renewable natural resources in a sustainable manner. It addresses how Project sponsors can mitigate threats to biodiversity arising from their operations as well as sustainably manage renewable natural resources. Specific objectives of this Performance Standard are:

- to protect and conserve biodiversity; and
- to promote the sustainable management and use of natural resources through the adoption of practices that integrate conservation needs and development priorities.

It further specifies that mitigation measures will be designed to achieve 'no net loss' of biodiversity and favour impact avoidance and prevention over reduction and compensation.

EBRD Performance Requirement (PR) 6 addresses biodiversity and has as its objective: the avoidance, minimisation and mitigation of impacts on biodiversity and the offsetting of significant residual impacts, where appropriate, with the aim of achieving 'no net loss' of biodiversity.

⁶ <http://www.wsc.org.mn/iba/Site%20accounts/MN048.pdf>

⁷ Nyambayar and Tseveenmyadag 2009, BirdLife Asia 2009, Kaczensky 2006.

Performance Requirement 6 calls for the designation of habitat types (as critical, natural, modified, protected or designated) and provides development constraints and requirements for each habitat type. Detailed assessment by biodiversity experts has concluded that the Project's Aol does affect Critical Habitat as defined within EBRD PR6 and IFC PS6. Thus the Oyu Tolgoi development is subject to the requirements of Paragraph 10 of IFC Performance Standard 6/Paragraph 14 of EBRD Performance Requirement 6. Further details on definition of critical habitat and associated implications to the Project are provided in *Chapter B7, 7.5* of the ESIA (Critical Habitat Determination). Specific requirements for the Project's construction phase are outlined in section 7 of this management plan.

The EBRD is also guided by and supports the implementation of international law and conventions and applicable EU Directives including Council Directive 92/43/EEC May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Fauna (the Habitats Directive) and Council Directive 79/409/EEC April 1979 on the Conservation of Birds (the Birds Directive).

6.7 COMPANY STANDARDS

Oyu Tolgoi is committed to the protection of biological diversity as stated in its Environmental Policy⁸ which states that *'Oyu Tolgoi is committed to sustainable development through finding a balance between environmental, social and economic needs. As a responsible corporate member of the community, Oyu Tolgoi recognises its responsibilities to the environment and to the communities in which it operates'*.

Rio Tinto's commitment to the conservation of biodiversity is expressed in its Biodiversity Strategy⁹ as follows *'Rio Tinto recognises the importance of the conservation and responsible management of biological diversity as a business and societal issue. We aim to have a net positive impact on biodiversity'*.

The strategy further commits to:

- the prevention, minimisation and mitigation of biodiversity risks throughout the business cycle;
- responsible stewardship of the land we manage;
- the identification and pursuit of biodiversity conservation opportunities; and
- the involvement of communities and other constituencies in our management of biodiversity issues.

Rio Tinto's global code of business conduct¹⁰ also states that *'We [Rio Tinto] are committed to having a net positive impact on biodiversity'*.

Oyu Tolgoi has developed its own Biodiversity Strategy¹¹ for the Project that is consistent with Rio Tinto's Strategy (see below).

6.8 COMPLIANCE WITH THE PROJECT STANDARDS

The Oyu Tolgoi Biodiversity Strategy, in response to the standards outlined above, presents Oyu Tolgoi's goal to achieve 'net positive impact' (NPI) on the biodiversity of the South Gobi region by mine closure. To achieve this goal, Oyu Tolgoi is committed to applying the 'mitigation hierarchy' in order to mitigate the project-related impacts to biodiversity. Application of the mitigation hierarchy will necessarily include the implementation of biodiversity offsets to compensate for the unavoidable residual impacts of the Project. Oyu Tolgoi has taken significant steps towards the development of offsets for the Project (*Chapter C6: Biodiversity and Ecosystem Services Impact Assessment*) and will continue the process of stakeholder engagement and technical evaluation in order to fully develop a Biodiversity Offsets Plan. Oyu Tolgoi will also develop a detailed Monitoring and Evaluation Program which will enable the Project to 1) better quantify its residual impacts, 2) determine the efficacy of mitigation actions including offset actions, and 3) track the Project's journey towards NPI. On-site mitigation measures for the operations phase, as well as

⁸ Oyu Tolgoi Environmental Policy, 2004

⁹ Rio Tinto and Biodiversity: Achieving Results on the Ground, 2012

¹⁰ Rio Tinto 'The way we work – our global code of business conduct', December 2009

¹¹ Oyu Tolgoi Biodiversity Strategy: Overall Approach, September 2011

commitments and actions related to construction activities that will occur during the operations phase, will be captured in an Operations Phase Biodiversity Management Plan. Combined with the multi-faceted biodiversity Monitoring and Evaluation Program and the Offsets Management Plan, these will be the primary tools by which Oyu Tolgoi will manage biodiversity and work towards achieving its goal NPI. Further information concerning Oyu Tolgoi's approach to ongoing biodiversity management is described in *Chapter C6: Biodiversity and Ecosystem Services Impact Assessment* of this ESIA.

6.9 ROLES & RESPONSIBILITIES

Overall lines of responsibility between Oyu Tolgoi and the Contractors are described in the *Chapter D1: ESMP Framework*. Overall responsibility for the implementation of this Management Plan shall rest with the Oyu Tolgoi Head of Environment who shall report on progress to the Oyu Tolgoi General Manager.

General responsibilities for the protection of flora and fauna are defined below and specific responsibilities identified in *Section 6.10*.

Oyu Tolgoi Environment Department will:

- have overall responsibility for the implementation of this Management Plan; the Oyu Tolgoi Head of Environment will work with the Oyu Tolgoi HSES Deputy Director and will report on progress to the Oyu Tolgoi General Manager;
- provide guidance to contractors and other Oyu Tolgoi departments on appropriate protection of flora and fauna;
- employ Environmental Officers who will monitor Oyu Tolgoi and Contractors' performance (see audit requirements in the ESAP);
- work with the procurement departments to ensure reputable haulage firms are used; and
- review and update this Construction Management Plan as required.

Principal Contractor:

- shall be responsible for the integration of the requirements detailed in this plan within their operating procedures and plans and ensuring its workforce is adequately trained in the requirements of this and their own Flora and Fauna Management Plans.

Workplace Supervisors (typically a nominated contractor representative overseeing a particular task):

- shall be responsible for ensuring the requirement of this and associated Contractor plan is implemented and therefore responsible for ensuring workers comply with the specific measures described in Section 6.10 of this plan.

6.10 MITIGATION MEASURES AND MANAGEMENT CONTROLS

The measures to be implemented in order to minimise impacts to flora and fauna during the Construction Phase are described in the table below. Contractors are required to incorporate the measures outlined in the table below within their own operating procedures and plans.

The longer term mitigation measures identified in *Chapter C6: Biodiversity and Ecosystem Services Impact Assessment* to be implemented during the operational phase will be described in an operations phase Biodiversity Management Plan. Actions related to the Offsets Strategy will be incorporated into the future Biodiversity Offsets Plan.

Table 6.1: Construction Phase Mitigation Measures and Management Controls - Flora and Fauna

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
FF01-a	Workers' behaviour/ presence of humans	General	Limit access of all Project personnel to undisturbed habitats to reduce potential habitat degradation and interaction with wildlife. Restrict personnel movements to designated roads and paths to minimise disturbance.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF01-b	Workers' behaviour/ presence of humans	General	All trapping, hunting or disturbance to wild animals will be strictly forbidden	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF01-c	Workers' behaviour/ presence of humans	General	Provide all Project operations staff and contractors with fuel for <i>ger</i> stoves (where applicable) to remove the need of local timber (i.e. saxaul)	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF01-d	Workers' behaviour/ presence of humans	General	Keeping pets or feeding wildlife within the Project area and camps will be strictly prohibited.	Oyu Tolgoi Environmental Department,	Audit and inspection programme	
FF01-e	Workers' behaviour/ presence of humans	General	Enforce no unauthorised waste disposal/littering from Oyu Tolgoi vehicles or around work place (see <i>Chapter D8: Waste Construction Management Plan</i>).	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF02-a	Workers' behaviour/ presence of humans	Illegal hunting/ animal products	Control illegal hunting by Oyu Tolgoi personnel when at work (awareness, publicity and enforcement of strict no-hunting policy, including inspection as required and suitable penalties)	Oyu Tolgoi Environmental Department (in association with CSP)	Records of meetings	
FF02-b	Workers' behaviour/ presence of humans	Illegal hunting/ animal products	Engage with local and regional stakeholders to control hunting in the Oyu Tolgoi Aol and more broadly within <i>Khanbogd soum</i> . As part of this, research the most effective actions to address illegal hunting and plant/animal collecting, and undertake appropriate and practicable actions adequate to facilitate the reduction in the level and impact of illegal hunting and plant/animal collecting to baseline levels (ie, prior to the Oyu Tolgoi Project).	Oyu Tolgoi Environmental Department (in association with CSP)	Records of meetings	
FF02-c	Workers' behaviour/	Illegal hunting/ animal	Inspect an adequate proportion of all aircraft baggage under Oyu Tolgoi control for illegal wild animal products.	Oyu Tolgoi Environmental	Records of meetings	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
	presence of humans	products		Department (in association with CSP)		
FF02-d	Workers' behaviour/ presence of humans	Illegal hunting/ animal products	Routinely inspect vehicles entering the Oyu Tolgoi site for illegal wild animal products.	Oyu Tolgoi Environmental Department (in association with CSP)	Records of meetings	
FF02-e	Workers' behaviour/ presence of humans	Illegal hunting/ animal products	Publicise and apply suitable penalties to offenders under Oyu Tolgoi control found trafficking illegal wild animal products.	Oyu Tolgoi Environmental Department (in association with CSP)	Records of meetings	
FF03-a	Water resources	Mine Licence Area activities	Divert the Undai River channel to maintain surface and subsurface water flows within the Undai River downstream of the Mine Licence Area.	Oyu Tolgoi Environmental Department	Audit and inspection programme Drainage plans	Note FF33 in regards to water resource monitoring
FF03-b	Water resources	Mine Licence Area activities	Oyu Tolgoi will install a replacement spring downstream of the mining K which will be fed by the diverted Undai base flow and ensure replacement spring mimics the ecological functions of Bor Ovoo spring in terms of maintaining similar surface and subsurface flow patterns and seasonal variations throughout the year.	Oyu Tolgoi Environmental Department	Audit and inspection programme Drainage plans	Note FF33 in regards to water resource monitoring
FF03-c	Water resources	Mine Licence Area activities	To minimise adverse impacts to flora and fauna, further measures to protect water resources are provided in <i>Chapter D7: Water Resources Construction Management Plan</i> .	Oyu Tolgoi Environmental Department	Audit and inspection programme Drainage plans	Note FF33 in regards to water resource monitoring
FF04	Land disturbance	Land disturbance procedure	Oyu Tolgoi operates Land Disturbance Permit procedure which is an internal approval for any type of land disturbing activities covering all native vegetation clearing inside and outside the lease areas.	Oyu Tolgoi Environmental Department	Permit approval records Audit and inspection programme	Permit compliance shall be enforced and inspected by the Project Management Team representatives and/or the Oyu Tolgoi Environmental

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
						Department for work performed by the earthwork operators/contractors throughout the proposed earthwork
FF04-a	Land disturbance	Land disturbance procedure	Prior to disturbance, proposed disturbance areas will be demarcated and inspected by Oyu Tolgoi Environmental Officers for aspects which may require environmental protection (threatened flora and fauna, priority fauna habitat, significant ecological communities etc.).	Oyu Tolgoi Environmental Department	Permit approval records Audit and inspection programme	
FF04-b	Land disturbance	Land disturbance procedure	Where necessary, rare or endangered species of flora identified in the work area may be transplanted in order to avoid adverse environmental impacts.	Oyu Tolgoi Environmental Department	Permit approval records Audit and inspection programme	
FF04-c	Land disturbance	Land disturbance procedure	Where impacts to an item or items of environmental or cultural significance are unavoidable, all practicable steps will be taken to minimise the degree of impact.	Oyu Tolgoi Environmental Department	Permit approval records Audit and inspection programme	
FF04-d	Land disturbance	Land disturbance procedure	Areas containing an item or items of environmental or cultural significance (including biodiversity) which is determined cannot be disturbed will be physically barricaded and sign posted.	Oyu Tolgoi Environmental Department	Permit approval records Audit and inspection programme	
FF04-e	Land disturbance	Land disturbance procedure	Where practicable, clearance of vegetation identified as containing potential breeding resources for fauna is to be conducted outside of breeding periods.	Oyu Tolgoi Environmental Department	Permit approval records Audit and inspection programme	
FF04-f	Land disturbance	Land disturbance procedure	Where construction activities are unable to be scheduled outside of breeding periods, for example – Haboura Bustard lekking season, specific activity plans will be developed that include: <ul style="list-style-type: none"> ▪ Field monitoring of proposed disturbance area immediately prior 	Oyu Tolgoi Environmental Department	Audit and inspection programme	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
			<p>to and during activities to identify habitat or activity that will be avoided;</p> <ul style="list-style-type: none"> ▪ Specific measures to minimise construction activities in identified sensitive areas (such as the Galbyn Gobi Important Bird Area); ▪ Measures to schedule works such that impacts on sensitive areas can be avoided where ever possible; and ▪ Specific induction of contractors and employees on measures to minimise disturbance of breeding species through restriction of certain activities or avoidance of machinery use in identified areas. 			
FF05-a	Land take, earthworks and construction	Fencing	Oyu Tolgoi will erect fencing around the Mine Licence Area. Fencing will be used to prevent access to active mining areas and plant operations including trial pits, put down areas and temporary camps. It will also prevent access to large mammals offering some protection to vegetation within the Mine Licence Area.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF05-b	Land take, earthworks and construction	Fencing	Fencing will be appropriate for the wildlife under consideration.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF05-c	Land take, earthworks and construction	Fencing	Fencing will be maintained throughout construction.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF06-a	Land take, earthworks and construction	Restoration ¹²	Oyu Tolgoi will assess the feasibility and practicality of collecting seeds from local species and they will be propagated in a Khanbogd nursery where practical.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	Rehabilitation and restoration activities are to be audited by the Environmental Department and reported in a timely basis. Rehabilitation and restoration success

¹² Per Rio Tinto's Biodiversity Strategy (2012), "Rehabilitation" involves the preparation of safe and stable landforms on sites that have been disturbed by Project activities, followed by re-vegetation with the aim of establishing a specific habitat type. "Restoration" is the term used when the original habitat type is recreated. To qualify in NPI calculations, the site will be restored to a state where its biodiversity values equal those of the original disturbed habitat, or better.

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
						will be monitored – see FFM06
FF06-b	Land take, earthworks and construction	Restoration	Oyu Tolgoi will return the maximum amount of disturbed land to pre-mining conditions suitable for nomadic herdsman and their grazing animals.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF06-c	Land take, earthworks and construction	Restoration	Oyu Tolgoi will leave the open pit areas (e.g. borrow pits), waste dumps and TSF in a condition that adequately protects long term safety of animals and the public.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF06-d	Land take, earthworks and construction	Restoration	Oyu Tolgoi will use, where possible, locally occurring vegetation species in the reclamation process.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF07	Rehabilitation	General	Oyu Tolgoi will implement annual Rehabilitation Management Plans with the aim to achieve final land uses compatible with pre-mining uses including endemic vegetation cover, water bodies, wildlife habitat, and livestock pasture.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results	
FF07-a	Rehabilitation	General	Oyu Tolgoi will rehabilitate and restore areas and features impacted in line with the standard Rio Tinto rehabilitation and restoration practice.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF07-b	Rehabilitation	General	Oyu Tolgoi will collect seeds from local species for direct use in rehabilitation activities and for propagation at Khanbogd nursery (see also FF09).	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
FF07-c	Rehabilitation	General	Suitable plant species for use in rehabilitation, seed species mix, application rates etc. will be determined by rehabilitation trials conducted by the Oyu Tolgoi Environment Team. Vegetation of natural analogue sites will be used to guide the ratio of annual to perennial plants used in rehabilitation seeding mixes.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF07-d	Rehabilitation	General	Where appropriate, rehabilitation and restoration of disturbed vegetation will specifically include Priority Biodiversity Features such as Mongolian Chesney, Riverine Elm Trees and Tall Saxaul.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF07-e	Rehabilitation	General	Where appropriate, use culturally useful/significant plant species as part of rehabilitation of disturbed areas.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF07-f	Rehabilitation	General	As part of its rehabilitation programmes, Oyu Tolgoi will progressively recreate stable landforms compatible with the surrounding environment following the completion of Oyu Tolgoi mine Project infrastructure components.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF07-g	Rehabilitation	General	Areas disturbed during exploration, construction, development and mining operations will be progressively rehabilitated rather than deferring large scale rehabilitation to the mine closure phase.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF07-h	Rehabilitation	General	Rehabilitation will also be managed through the Mine Closure Management Plan that will be developed as part of the suite of operational management plans. See <i>Chapter D21: Mine Closure and Rehabilitation Framework</i> and also <i>Chapter D4: Topsoil Construction Management Plan</i> .	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results.	
FF07-i	Rehabilitation	Rehabilitation	Areas disturbed during exploration, construction, development and mining operations, including the Temporary Airstrip, will be progressively rehabilitated rather than deferring large scale rehabilitation to the mine closure phase.	Oyu Tolgoi Environmental Department	Oyu Tolgoi Environmental Department	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
FF08	Reinstatement	Roads and tracks	Old and disused roads and tracks that were constructed by Oyu Tolgoi will be progressively rehabilitated. Rehabilitated tracks and roads will be appropriately sign-posted to prevent future use by vehicles and will be monitored to assess rehab success.	Oyu Tolgoi Environmental Department	Audit Programme and ongoing monitoring results	
FF09	Khanbogd nursery	Restoration	A native plant nursery has been established in Khanbogd Town to cultivate locally native species for use in Oyu Tolgoi rehabilitation, on-site greening projects and landscaping as well as Khanbogd Town greening and landscaping.	Oyu Tolgoi Environmental Department	Presence of nursery and record of visitors/ trainees	
FF09a	Khanbogd nursery	Restoration	Nursery began initial operation in 2011 and is planned to reach full production capacity by 2014. Other objectives for the nursery are to: <ul style="list-style-type: none"> ▪ Establish an information centre within the nursery grounds to educate visitors on the geography, biodiversity, cultural history, environmental impacts of pollution/waste and traditions of nature conservation in the South Gobi region. ▪ Promote the cultivation of Rare and Very Rare plant species of the local area - including species identified as Priority Biodiversity Features 	Oyu Tolgoi Environmental Department	Audit and inspection programme	See comment in relation to FF09 above.
FF10	Land take, earthworks and construction	Rare species	Prior to disturbance, proposed land disturbance areas will be demarcated and inspected by suitably qualified Oyu Tolgoi Environmental Officers for aspects which may require environmental protection (threatened flora and fauna, priority fauna habitat, conservation significant ecological communities etc.). Based on results of environmental survey, the Environmental Department may develop specific measures to protect flora and fauna with a proposed land disturbance envelope. These measures must be implemented and maintained by the earthwork operators/contractors at all times throughout the proposed earthwork. Biodiversity features retained within a land disturbance envelope will be mapped and monitored to ensure adverse impacts are avoided/minimised. In circumstances where trees must be removed and not translocated, the species and tree age/diameters will be logged. Recording of all other incidents involving fauna.	Oyu Tolgoi Environmental Department	Audit and inspection programme – monitoring and mapping results Incident records	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
FF11	Land take, earthworks and construction.	Rare plants - relocation	Where pre-clearance surveys identify the presence of priority plant species, the Oyu Tolgoi Environmental Department will investigate the potential for relocating individuals of priority plant species. Any use of herbicides will comply with the requirements for pesticide use and management of paragraphs 12-15 of the 2006 version of IFC <i>Performance Standard 3: Pollution Control and Abatement</i> .	Oyu Tolgoi Environmental Department	Audit	
FF11-a	Land take, earthworks and construction.	Rare plants - relocation	Prior to disturbance, proposed land disturbance areas will be demarcated and inspected by suitably qualified Oyu Tolgoi Environmental Officers for aspects which may require environmental protection including rare and very rare plants or other priority flora.	Oyu Tolgoi Environmental Department	Permit approval records Audit and inspection programme	
FF11-b	Land take, earthworks and construction.	Rare plants - relocation	Prior to any relocation effort, a relocation plan will be drawn up and locations identified for the relocation of flora.	Oyu Tolgoi Environmental Department	Permit approval records Audit and inspection programme	
FF11-c	Land take, earthworks and construction.	Rare plants - relocation	Rare and very rare plants within the Mine Licence Area that could be affected by construction (but which are not within any land disturbance envelope) will be demarcated to ensure no unintentional disturbance occurs.	Oyu Tolgoi Environmental Department	Permit approval records Audit and inspection programme	
FF11-d	Land take, earthworks and construction.	Rare plants - relocation	Weed Control Management, as outlined in the interim rehabilitation management plan, will be implemented.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF11-e	Land take, earthworks and construction.	Rare plants - relocation	Herbicides will not be used unless the appropriate approvals have been obtained from the applicable Mongolian authorities. Wherever possible the use of herbicides will be minimised.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF11-f	Land take, earthworks and construction.	Rare plants - relocation	There will be no new quarries constructed by Oyu Tolgoi in the “pristine” or “limited use” zones of the SGSPA (South Gobi Strictly Protected Area).	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF12	Noise and vibration	General	1. Noisy activities including road traffic and noisy equipment will be managed to minimise potential disturbance to wildlife. 2. Noisy construction activities will be limited to normal working hours.	Oyu Tolgoi Environmental Department	Audit and inspection programme	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
			<p>3. Noisy equipment in the mine will be located in areas where there is natural screening of the equipment.</p> <p>4. No stationary noisy equipment to be located within 500 m of a spring or other faunal focal point.</p> <p>5. Particularly noisy equipment which has the potential to reach the upper limits of the Project Standards will be fitted with noise abatement equipment such as noise barriers, baffles, sound insulation or enclosures where practicable (See <i>Chapter D3: Noise and Vibration Construction Management Plan</i>).</p> <p>Refer to <i>Chapter B4: Noise and Vibration Baseline</i> for noise standards containing specific noise parameters/guidance</p>			
FF13	Light pollution	General	As much as practical, all light units will be designed so as to illuminate the minimal necessary area, thus not creating light pollution. This applies to light units both on and off site.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF13-a	Light pollution	General	As much as practical, lighting units will be positioned to utilise natural or equipment screening to reduce the visual impact.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF13-b	Light pollution	General	To the extent practicable, no permanent lighting units will be stationed within 500 m of a spring or other faunal focal point (with the exception of the Bor Ovoo spring which is proposed to be directly disturbed by the mine development)	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF14	Vehicle movements	General	Traffic management and vehicle/machinery hygiene measures will be implemented that minimise adverse impact to flora and fauna. These measures are detailed in the <i>Chapter D11: Transport Construction Management Plan</i> . Specific measures identified as part of an infrastructure specific biodiversity impact and mitigation assessment are provided in FF15 – FF21 below.	Oyu Tolgoi Environmental Department	See Transport Plan	
FF15	Roads	Speed restrictions	Enforce speed limits of Oyu Tolgoi vehicles on sealed and unsealed roads on and off-lease (speed limits for Oyu Tolgoi vehicles will be reviewed in consultation with a wildlife expert).	Oyu Tolgoi Environmental Department	Record of stakeholder meetings	
FF15-a	Roads	Speed restrictions	Engage with key stakeholders to support the adoption and enforcement of suitable speed limits (in line with Oyu Tolgoi vehicle speed limits) on all public users of the Oyu Tolgoi to Gashuun Sukhait Road.	Oyu Tolgoi Environmental Department	Audit and inspection programme	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
FF16	Roads	Off road traffic	Unless specifically authorised, prohibit Oyu Tolgoi Project vehicles (i.e. including contractors) from driving 'off-road (i.e. off existing defined tracks and roads).	Oyu Tolgoi Environmental Department	Presence of physical barriers GPS tracking	
FF17	Roads	Driver behaviour	Oyu Tolgoi will engage with key stakeholders to encourage all road users to minimise parking beside roads except in an emergency or to manage fatigue. This applies to all roads used or maintained by Oyu Tolgoi. All Oyu Tolgoi and contractors' vehicles will have GPS tracking systems fitted which will record vehicle movements.	Oyu Tolgoi Environmental Department	Presence of physical barriers GPS tracking	
FF18	Roads	Warning signs	Erect signage on roads to warn drivers of the risk of collision with wild animals. This applies to all roads used or maintained by Oyu Tolgoi.	Oyu Tolgoi Environmental Department	Presence of signs Record of meetings	Will require liaison with road authorities
FF19a	Roads	Litter and carcasses	Oyu Tolgoi will inspect and remove litter and other anthropogenic waste from along the Oyu Tolgoi to Gashuun Sukhait road, Oyu Tolgoi to Khanbogd road and Oyu Tolgoi Borefield Access road 3 times weekly during peak construction period (frequency of inspections to be reviewed on an ongoing basis, and is expected to be reduced as the Project moves to operational phase and traffic on roads reduces).	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF19b	Roads	Litter and carcasses	All collision carcasses identified by litter inspection teams and/or vehicles travelling along roads will be reported to site environmental offices and inspected by trained site biodiversity specialists.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF20	Oyu Tolgoi to Gashuun Sukhait road	Underpasses	As described in the Biodiversity Action Plan: <ul style="list-style-type: none"> ▪ Develop and submit for Lenders' review a workplan for the installation of underpasses, which will include activities/timelines for stakeholder consultation, design, locations, engineering, environmental assessment. ▪ Complete underpass construction. 	Oyu Tolgoi Environmental Department	Presence of traffic calming signs	
FF21	Roads	Roads and tracks	As described in the Biodiversity Action Plan: <ul style="list-style-type: none"> ▪ Write a workplan for the installation of structures or barriers at sensitive areas to prevent vehicles from leaving the Oyu Tolgoi to Gashuun Sukhait, Oyu Tolgoi to Khanbogd and Oyu Tolgoi airport roads. ▪ Install the structures. Structures should serve as an effective deterrent while at the same time	Oyu Tolgoi Environmental Department	Audit and inspection programme	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
			facilitate wildlife crossing (or not present a barrier to wildlife crossings) and not creating a risk to traffic safety.			
FF22a	Dust	On site and strategic areas off site	Dust suppression activities will be undertaken on site and in strategic areas off site as per <i>Chapter D2: Atmospheric Emissions Construction Management Plan</i> .	Oyu Tolgoi Environmental Department	Audit and inspection programme – volume of water used for dust suppression	
FF22b	Dust	On site and strategic areas off site	Dust control and progressive sealing of the Oyu Tolgoi to Gashuun Sukhait road will minimise the potential for windborne dust transmission.	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF24	Transmission lines/other Project structures	Predatory birds	Document and where safe to do so in accordance with HSE policies remove collision carcasses and nests from medium voltage and high voltage powerlines during regular inspections. Revise periodicity of inspections after 6 months then at annual intervals.	Oyu Tolgoi Environmental Department	Inspection programme	FF24
FF24-a	Transmission lines	Predatory birds	Where safe to do so and in accordance with HSE policies, Oyu Tolgoi will remove nests of birds which predate bustards (except where known to be Saker Falcon nests) where nests are made on project-related infrastructure.	Oyu Tolgoi Environmental Department	Audit and inspection programme	FF24-a
FF25	Flora & Fauna Protection Measures - Airport Operation	Airport Operation	Impacts from airport operations will be managed so as to minimise adverse impacts to wildlife. Specific measures for the protection of flora and fauna are described in the <i>Chapter D11: Transport Construction Management Plan</i> .	Principal Contractor Oyu Tolgoi Environmental Department	Inspection/ incident records	
FF26	Sustainable development	Khanbogd regional development	Seek opportunities to engage with key stakeholders and integrate biodiversity mitigation actions, including those that minimise cumulative fragmentation effects of linear infrastructure into regional planning, including infrastructure development, within Khanbogd <i>soum</i> . (It is noted that more detailed commitments may be developed in association with the Oyu Tolgoi Project social team).	Oyu Tolgoi Environmental Department Oyu Tolgoi CSP	Review of funding	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
FF27	Power line infrastructure	Collision risk reduction	Add bird flight diverters to all high voltage offsite power lines constructed for the Oyu Tolgoi Project (install alternating flapper-type flight diverters and large spirals, alternating contrasting colours, at a frequency of at least one of each every 10 - 20 m i.e. one device every 5 -10 m).	Principal Contractor	Inspection/ incident records	
FF28	Power line infrastructure	Electrocution risk reduction	Insulate medium-voltage power line poles, dead-ends and sub-stations and on pylons where necessary and safe to do so in accordance with HSE policies.	Oyu Tolgoi Management Team	Review of funding	
FF29	Roads	Collision and fragmentation risk reduction	Provide driver awareness and training for all Oyu Tolgoi staff and contractors with specific information on priority biodiversity features (e.g. ungulates and birds).	Oyu Tolgoi Environmental Department	Audit and inspection programme	
FF30	Biodiversity Management Plan	Monitoring	<p>Oyu Tolgoi is committed to the development of a Biodiversity Management Plan (BMP) for the Project's operational phase.</p> <p>Mitigation actions that are not able to be implemented as part of the Project design and or actual construction will be implemented during the operation phase of the Project and will be captured in the Oyu Tolgoi BMP. The BMP will set out the operational biodiversity objectives, associated targets and actions that will be undertaken by Oyu Tolgoi in order to effectively manage biodiversity. Actions will be assigned to a specific individual or department and other human and financial resources will be allocated as appropriate. The Oyu Tolgoi BMP will have strong linkages with the operations EMS and performance against each BMP action will be regularly tracked and reported to site management.</p> <p>Throughout the construction phase Oyu Tolgoi will continue to develop elements of its biodiversity program. Specifically these elements include the Oyu Tolgoi Offsets Plan and Oyu Tolgoi Biodiversity Monitoring and Evaluation Program.</p> <p>Offsets will require significant interaction and cooperation from 3rd parties e.g. Government of Mongolia.</p> <p>Biodiversity issues will stimulate significant training needs and a comprehensive monitoring programme throughout the lifetime of the Project.</p>	Oyu Tolgoi Environmental Department	<p>Completion of Biodiversity Management Plan</p> <p>Audit and inspection programme</p>	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
FF31	Monitoring - Biodiversity	Monitoring	<p>Oyu Tolgoi will develop a detailed Monitoring and Evaluation Program which provides scientifically robust methods for assessing:</p> <ul style="list-style-type: none"> ▪ Projected-related residual impacts on biodiversity ▪ The adequacy and effectiveness of mitigation actions ▪ The adequacy of measures that mitigate impacts to critical ecosystem services including vegetation and pasture quality. ▪ The adequacy and effectiveness of offset actions. <p>Where appropriate, Oyu Tolgoi will seek out opportunities to coordinate and collaborate with other South Gobi biodiversity stakeholders so as to maximise the spatiotemporal breadth and cost-efficiency of its monitoring and evaluation program.</p>	Oyu Tolgoi Environmental Department	Completion of the M&E Plan Audit and inspection programme	This program will be inclusive of the monitoring measures outlined in FF33
FF32	Monitoring - animal crossings	Monitoring	Oyu Tolgoi will ensure that biodiversity impact mitigation is considered during logistics planning and will implement monitoring of ungulate movements which will inform any potential future restrictions on traffic movements.	Oyu Tolgoi Environmental Department	Biodiversity Monitoring and Evaluation results Audit and inspection programme	
FF33	Monitoring - Hydrology	Monitoring	<p>Oyu Tolgoi has committed to undertaking the following specific monitoring with respect to groundwater:</p> <ul style="list-style-type: none"> ▪ In consultation with experts, establish a groundwater monitoring programme sufficient to detect project-related impacts of mine dewatering on surficial and alluvial aquifers (temporal and spatial analyses required to assess rate and extent). ▪ In consultation with experts, establish a groundwater monitoring programme sufficient to enable the detection of project-related impacts on groundwater levels and surface hydrology in the Undai downstream of the mine. ▪ In consultation with experts, establish a groundwater monitoring programme sufficient to detect impacts on surficial and alluvial groundwater levels related to abstraction from the Gunii Hooloi deep cretaceous aquifer. ▪ In consultation with experts, establish a groundwater monitoring programme sufficient to detect any change in groundwater level of the deep Galbyn Gobi aquifer arising from abstraction from 	Oyu Tolgoi Environmental Department	Monitoring results Audit and inspection programme	

ID	Topic/ Aspect	Applicability/ Activity	Control Description	Responsible Parties	Means of verification	Comments
			<p>the Gunii Hooloi deep cretaceous aquifer.</p> <ul style="list-style-type: none"> ▪ In consultation with experts, establish a groundwater monitoring programme sufficient to detect impacts on surficial and alluvial groundwater levels related to abstraction from the deep Durulj Mount Southern aquifer Khanbogd town water supply aquifer. <p>While monitoring is generally not considered a mitigation action per se, in this case it is considered critical to determine future potential mitigation actions will the Project be found to have a negative impact on surface water and shallow groundwater.</p>			

Oyu Tolgoi is committed to the development of a Biodiversity Management Plan (BMP) for the Project's operational phase.

The BMP will set out the operational biodiversity objectives, associated targets and actions that will be undertaken by Oyu Tolgoi in order to effectively manage biodiversity. Actions will be assigned to a specific individual or department and other human and financial resources will be allocated as appropriate. The Oyu Tolgoi BMP will have strong linkages with the operations EMS and performance against each BMP action will be regularly tracked and reported to site management.

Throughout the construction phase Oyu Tolgoi will continue to develop elements of its biodiversity program. Specifically these elements include the Oyu Tolgoi Offsets Plan and Oyu Tolgoi Biodiversity Monitoring and Evaluation Program.

6.11 TRAINING

Training will be provided to all Oyu Tolgoi employees, contractors and their sub-contractors to ensure that each employee has sufficient knowledge to be able to comply with the requirements of this Plan. This will include training on such aspects as awareness of wildlife and habitat management (including details of actions to be taken when wildlife of conservation concern is identified), prohibitions on feeding wildlife and the secure storage and disposal of food wastes.

The Oyu Tolgoi Environmental Department will provide necessary environmental training and inductions to earth work operators or contractors. Training will include explanation of the importance of minimising vegetation and soil disturbance on and off site.

Driver awareness training will be given to all Oyu Tolgoi staff and contractors with specific information on priority biodiversity features (e.g. ungulates and birds). Further training requirements which will have direct benefit to the protection of flora and fauna are also included within *Chapter D11: Transport Construction Management Plan*, *Chapter D12: Hazardous Materials Construction Management Plan*, *Chapter D7: Waste Construction Management Plan* and *Chapter D3: Noise and Vibration Construction Management Plan*.

6.12 PERFORMANCE MONITORING

The monitoring measures that are to be implemented during the Construction Phase to ensure compliance with the Project Standards (see Section 6.6.5) are described in Table 6.2 below. In the event that monitoring results identify non-conformances with Project Standards, these will be investigated and corrective actions identified (see *Chapter D1: ESMP Framework* for further details).

The analysis and evaluation of the monitoring results (and recommendations for corrective actions and adaptive management) will be subject to technical review to ensure compliance with Project requirements. Consultation with stakeholder communities will be held regularly to determine the success and effectiveness of this Flora and Fauna Construction Management Plan and to address any community concerns. The initial frequency of these meetings will be agreed with the stakeholder communities, but are expected to become less frequent as the Project becomes established. (See *Chapter D14: Stakeholder Engagement Plan* and *Chapter D18: Community Health, Safety and Security Plan* for further details).

The fauna and flora surveys undertaken as part of the Project's ESIA process provide an initial baseline against which the construction phase monitoring of the impacts will be measured. Impacts that will be assessed include the effects of changes to the surface and groundwater in the area, as well as impacts from disturbance, landtake/degradation, dust and other factors, on fauna and flora.

Table 6.2: Monitoring Measures – Flora and Fauna

ID	Topic/Aspects	Monitoring requirement	Periodicity	Location
FFM-01	Land clearance	The Oyu Tolgoi Environmental Department will monitor and map habitats within the construction and other land clearance areas; as far as possible, a record will be kept of the type of habitat and flora species; where trees are removed, the species and tree age/diameters will be logged.	Prior to land clearance	Areas scheduled for clearance
FFM-02	Wildlife injury/mortality	All incidents involving fauna will be recorded by the Environmental Department; all sightings of species of conservation interest by the Environmental Department will also be reported. Wildlife and domestic livestock mortalities will be recorded (e.g. from vehicle strikes, plant accidents or other sources).	Continuous Reports to be collated monthly by the Environmental Dept	All areas within the Project Area of Influence
FFM-03	Wildlife injury/mortality	Document collision carcasses and nests from medium voltage and high-voltage powerlines during monthly inspections.	Monthly Review periodicity of inspections after 6 months then at annual intervals.	Transmission lines
FFM-04	Presence of animals	Routine site inspections and wildlife animal counts will be conducted as appropriate and subject to a suitably-qualified expert being in place. This will include the numbers and location of: <ul style="list-style-type: none"> ▪ Large and small mammals ▪ Birds (including migratory birds) ▪ Reptiles ▪ Invertebrates. 	Monthly	12 monitoring locations (birds and invertebrates) and additional sites in the vicinity of the Mine Licence Area for migratory species and reptiles Further sites at the borefield and pipeline and also the Oyu Tolgoi to Gashuun Sukhait infrastructure corridor.
FFM-05	Flora – test plots	Vegetation monitoring will continue at the plots established within the Mine Licence Area to investigate long-term vegetation responses to grazing pressure and climatic events. The monitoring has occurred every 6 months since May 2003. This monitoring will include the presence and follow up of any invasive alien plant species.	Every 6 months through the life of the mine.	Further sites at the borefield and pipeline and also the Oyu Tolgoi to Gashuun Sukhait infrastructure corridor
FFM06	Rehabilitation and Restoration	Restoration condition and rehabilitation status to be monitored Rehabilitation success will be monitored using the following techniques: <ul style="list-style-type: none"> ▪ Areas landscape function analysis (soil condition and mobilisation), vegetation dynamics (species composition, density and cover), and habitat complexity ▪ Observations of biodiversity and evidence of nesting in the rehabilitated area ▪ Invasive alien plant monitoring to ensure Project does not lead to 	To be determined on a site-by-site basis.	Disturbed areas including rehabilitated tracks and roads

		introduction or promotion of such species.		
FFM07	Rare plants	Rare plant distribution and density	Annually	Within the Oyu Tolgoi lease area and elsewhere in the Project Aol.
FFM08	Tall Saxaul and Elm Trees	Elm tree quantity and survival condition Elm and tall Saxaul forest quantity and survival condition	Annually	East of Oyu Tolgoi lease area within the zone of predicted drawdown from dewatering. Downstream of the Undai diversion

Other monitoring requirements that have direct implications to biodiversity are captured in *Chapter D11: Transport Construction Management Plan*, *Chapter D12: Hazardous Materials Construction Management Plan*, *Chapter D7: Waste Construction Management Plan*, *Chapter D3: Noise and Vibration Construction Management Plan* and *Chapter D7: Water Resources Construction Management Plan*.

Monitoring actions described in this document will be supplemented by the development of the Biodiversity Monitoring and Evaluation Program (BMEP). This program will be developed as set forth in the Biodiversity Action Plan (see *Chapter C6: Biodiversity and Ecosystems Services Impact Assessment*) and will help support an adaptive management approach to mitigating impacts

6.13 KEY PERFORMANCE INDICATORS

Key Performance Indicators (KPIs) for the protection of flora and fauna are presented in Table 6.3.

Table 6.3: Key Performance Indicators

ID	KPI	Target	Monitoring measure
FF-KPI 01	Number of reported non-compliances against the mitigation controls identified in this Management Plan (Table 6.1).	Minimise and achieve continuous improvement in number of reported non-compliances	See 'means of verification' column in Table 6.1
FF-KPI 02	Number of incidents/activities resulting in significant adverse impact to: <ul style="list-style-type: none"> ▪ Flora and fauna ▪ Flora and fauna of particular conservational interest <p>The term 'significant adverse impact' or other thresholds or categories of impacts will be defined in the future and these will be different for different species and will be further developed within the context of Oyu Tolgoi's procedures and regionally applicable information.</p>	Minimise with a target of zero	See FFM-02 and FFM03
FF-KPI 03	Percentage of workers undertaking environmental awareness training	100% of those identified for training	Oyu Tolgoi and contractors' training records

See also TSM-KPI 03 from *Chapter D4: Topsoil Construction Management Plan* as duplicated below

TSM-KPI 03	Percentage of reinstated areas achieving target criteria for species abundance and diversity	80% re vegetation (by coverage and species diversity)	Species diversity and abundance (TSMM3)
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Additional KPIs may be developed by the organisation selected for the performance monitoring of Oyu Tolgoi's biodiversity management.