THE BIODIVERSITY CONSULTANCY

WILDLIFE CONSERVATION SOCIETY

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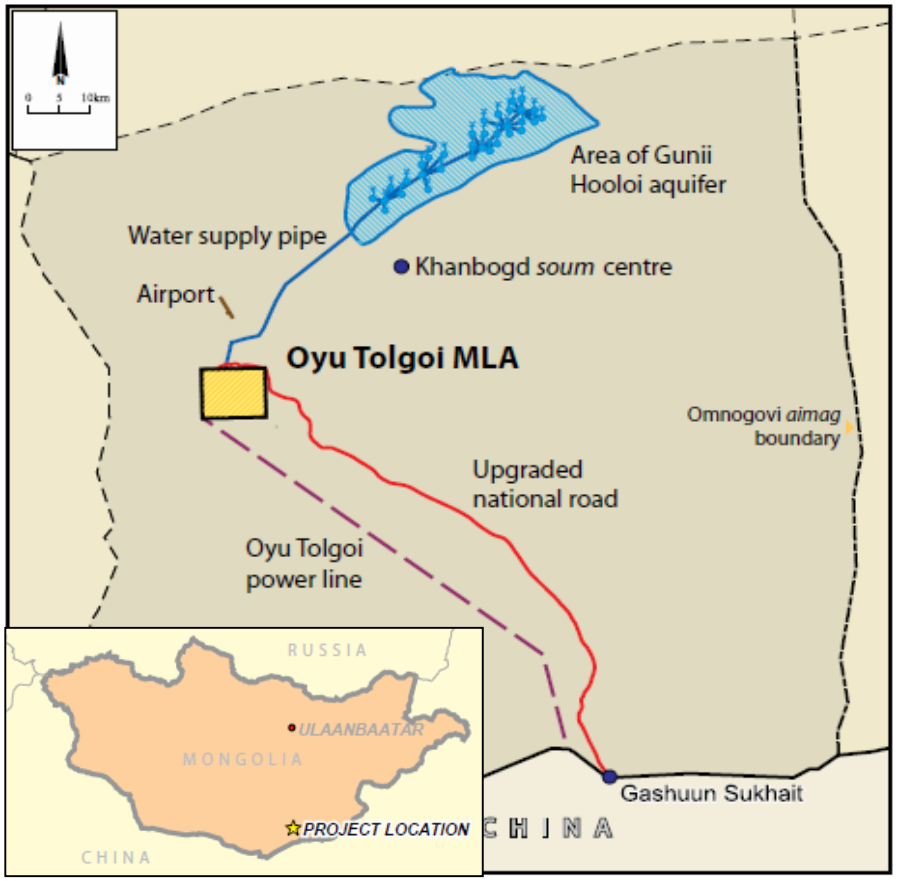
Project background

- Largest unexploited copper deposit in the world
- Ivanhoe Mines began exploration in early 2000s
- Controlling stake obtained by Rio Tinto in 2012
- Production started 2013
- Corporate NPI goal + IFC, EBRD, EDC standards + government commitments



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Infrastructure within the ranges of globally-threatened species

- Critical Habitat: globally important concentrations of Endangered Asiatic Wild Ass & nationally important concentrations of other species (two ungulates, one bird, plants)
- Major potential impacts of direct habitat loss; indirect habitat loss owing to avoidance of infrastructure by animals; fragmentation; etc… plus hydrological uncertainties

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Application of mitigation hierarchy

- Early (especially avoidance) opportunities missed by Ivanhoe
- Biodiversity Management Plan options papers, with individual risk assessments for main infrastructure features, guided mitigation during construction
- As part of the ESIA, TBC & FFI wrote wrote the first publicly disclosed documents to demonstrate fulfilment of PS6 2012

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Calculate residual impacts

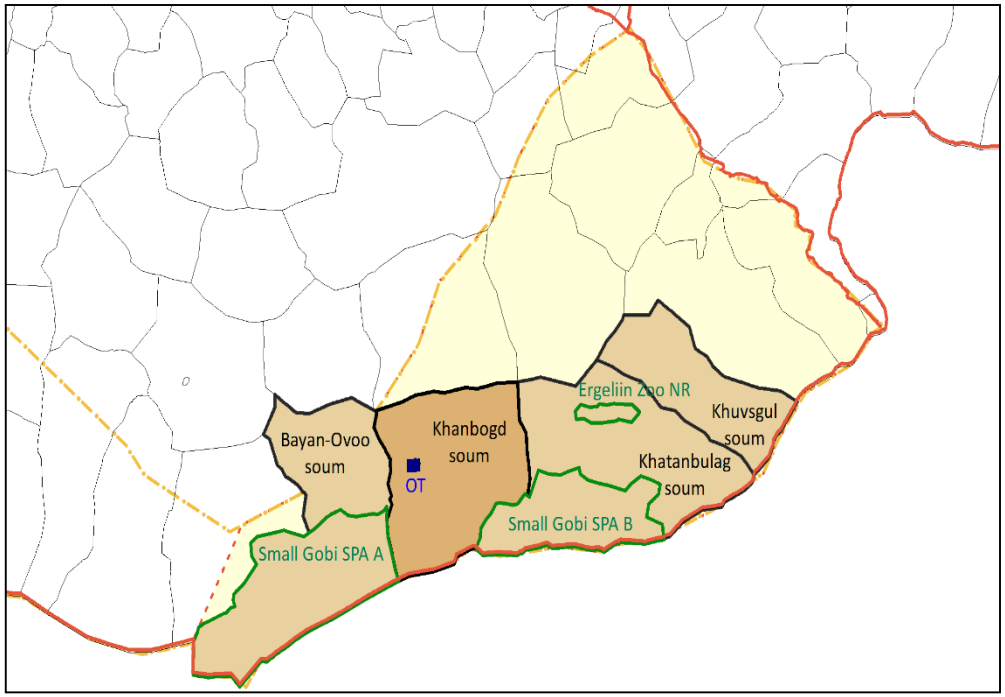
Accounting approach for transparent stakeholder inspection of predictions and results

Table 1. Projected net position (gains minus losses) in 2036 for priority biodiversity features addressed by the offsets strategy (Quality Hectares)

Name	Direct & indirect habitat loss (1000 ha)	Quality of habitat lost (0-1; 1 being highest)	Loss from increased hunting (1000 QH)	Residual loss (1000 QH)	Gain from hunting control (1000 QH)	Gain from rangeland manage-ment (1000 QH)	Predicted overall offset gain (1000 QH)	Net position (1000 QH)	NPI / NNL ?
Mongolian Chesney[1]	9	0.9		8	0	21	21	13	Yes
Asiatic Wild Ass	155	0.5	392	470	530	21	551	59	Yes
Argali	30	0.5	392	407	530	21	551	122	Yes
Goitered Gazelle	130	0.5	392	458	530	21	551	72	Yes
Mongolian Gazelle	76	0.5	392	431	530	21	551	99	Yes
Swan Goose	0								Yes[2]
Ferruginous Duck	0								Yes[2]
Short-toed Snake-eagle	9	0.9		8	0	21	21	13	Yes[2]
Saker Falcon	9	0.9		8	0	21	21	13	Yes[2]
Egyptian Vulture	9	0.9		8	0	21	21	13	Yes[2]
Great Bustard	71	0.9		64	0	21	21	-43	No[2,3]
Houbara Bustard	71	0.9		64	0	21	21	-43	No[2,3]
Relict Gull	0								Yes[2]
Pallas' Sandgrouse	9	0.9		8	0	21	21	13	Yes[2]
Yellow-breasted Bunting	9	0.9		8	0	21	21	13	Yes
Mongolian Ground-Jay	9	0.9		8	0	21	21	13	Yes

Offset design

- Sizeable impacts may require very large offsets
- Especially anti-poaching & rangeland management



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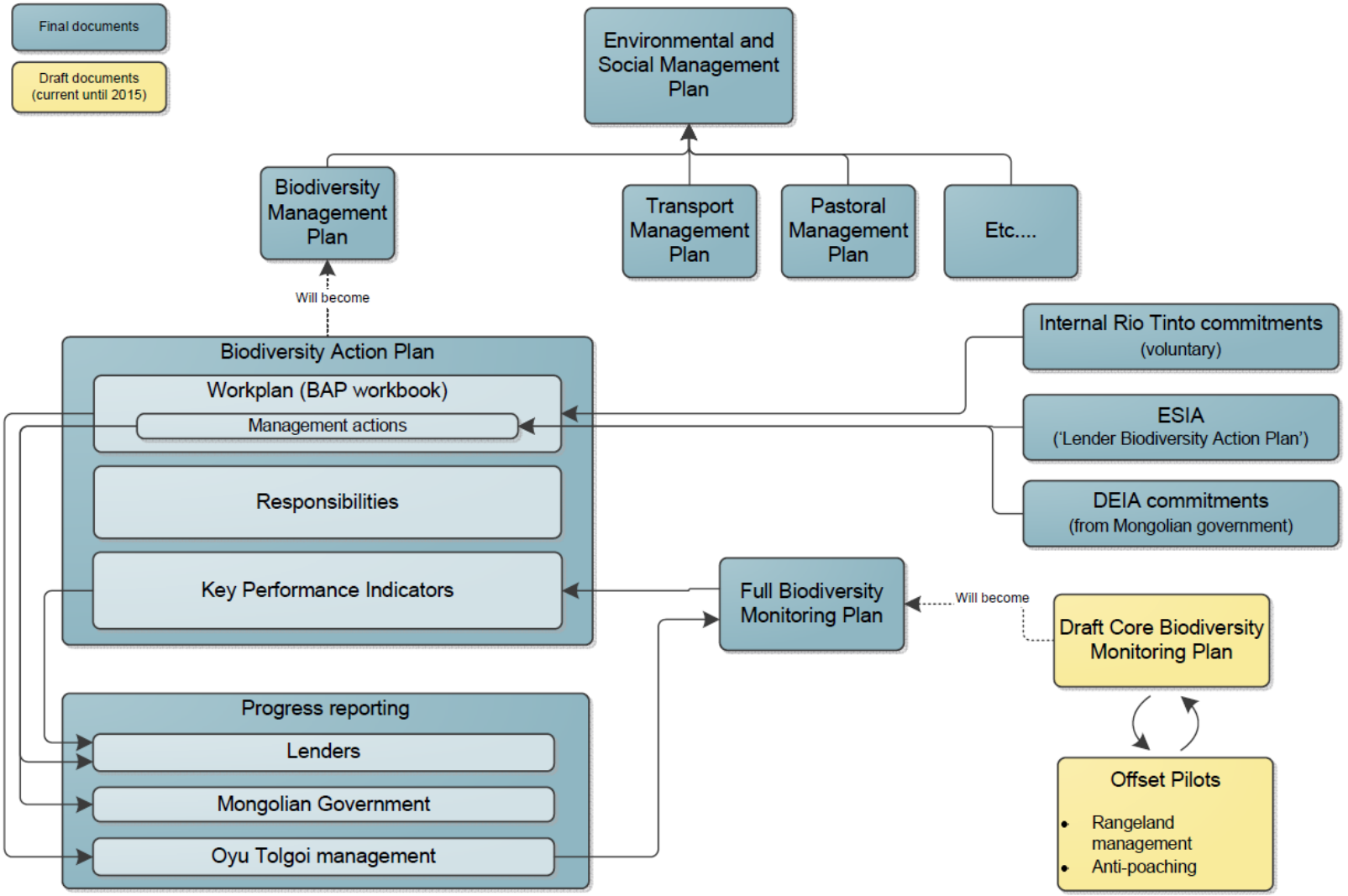
Current state of OT biodiversity management



Monitoring for adaptive management

- WCS is leading a biodiversity monitoring programme with OT and other partners
- TBC led design of a monitoring framework that fulfils PS6 requirements
- Key challenges:
  - Scale (>150,000 km^2)
  - Unpredictable landscape/biodiversity (e.g. nomadism)
  - Diversity of monitoring partnership (NGOs, institutions, company, consultancy, etc.)

Key aspects of monitoring framework

- Multiple indicators for each impact wherever possible
- Spread of pressure, state and response indicators

Indirect mortality from hunting or harvesting facilitated by increased access and growth of Khanbogd	• Amount of poaching and confiscated items reported by environment inspectors, PA staff and communities • Market analysis of demand/prices • Reports from informants • Amount collected by people in Khanbogd Soum • Human-induced mortality of collared animals • Number of carcasses	• Density of Houbara Bustard • Area of saxaul forest • Population size (of wild ungulates): a, b • Number of individual priority plants in vegetation transects • Number of individuals of saxaul per transect-km • Area of saxaul forest	• Actions taken to control poaching • Number of trucks of wood provided to communities

Key aspects of monitoring framework

- Indicator thresholds for investigation and adaptive management

Feature	Indicator	'Orange' threshold[5]	'Red' threshold
Asiatic Wild Ass	Number of carcasses	**>10%** increase in carcasses found / year, or **>30%** increase over ten years	**>30%** increase in carcasses found / year, or **>50%** increase over ten years
	% of inspections finding wildlife products	**Any** inspection finding illegal Asiatic Wild Ass products	**>1** inspection finding illegal Asiatic Wild Ass products
	Number of random inspections	**<6** inspections / quarter	**<1** inspection / quarter
	Number of animals crossing OT road	**<5** animal crossings / year detected	**<1** animal crossings / year detected
	Collisions with OT vehicles	**Any** collisions with OT vehicles	**>2** collisions/month with OT vehicles

Key aspects of monitoring programme

- Riverine elm and poplar & Saxaul– Critical Habitat (CH)-
- Granite outcrop & Rare plants -CH
- Rangeland quality: True desert & semi-desert
- Ungulates: ground-based & aerial survey, collaring, anti-poaching
- Short-toed Snake-eagle – CH
- Houbara Bustard – RT
- OT Monitoring: speed limits, bird diverters, rehabilitation, inspections etc.
  - Lessons Learned &
  - Assess thresholds
  - Create adaptive management
  - Develop capacity building plan around gaps

Making a success of No Net Loss: recommendations

- *Companies (inc. consultants):* select a suite of indicators that represent both (i) priority features themselves and (ii) ecosystems/ biodiversity more broadly. Have realistic expectations of the cost/challenges of biodiversity monitoring for NNL.
- *Governments:* align NNL/offset policies with international standards so companies do not have to create two mitigation and offset strategies.
- *Conservation community:* work collaboratively with companies to further conservation through their mitigation and offset strategies.