Proteus Partners Meeting 2013

Houston, TX, USA


PS6

Introduction to development bank safeguards, Performance Standard 6 and the concept of Critical Habitats

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Disclaimer

My own views and not necessarily those of International Finance Corporation

What do we want out of this?

* **Establish common understanding of:**
  * Performance Standards as a benchmark
  * PS6 + critical habitats
  * Suggested resources in PS6
* **Identify potential challenges and solutions to implementation of PS6**

International Finance Corporation

IFC Performance Standards

PS1: Assessment and Management of E&S Risks and Impacts

PS2: Labor and Working Conditions

PS3: Resource Efficiency and Pollution Prevention

PS4: Community Health, Safety and Security

PS5: Land Acquisition and Involuntary Resettlement

PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

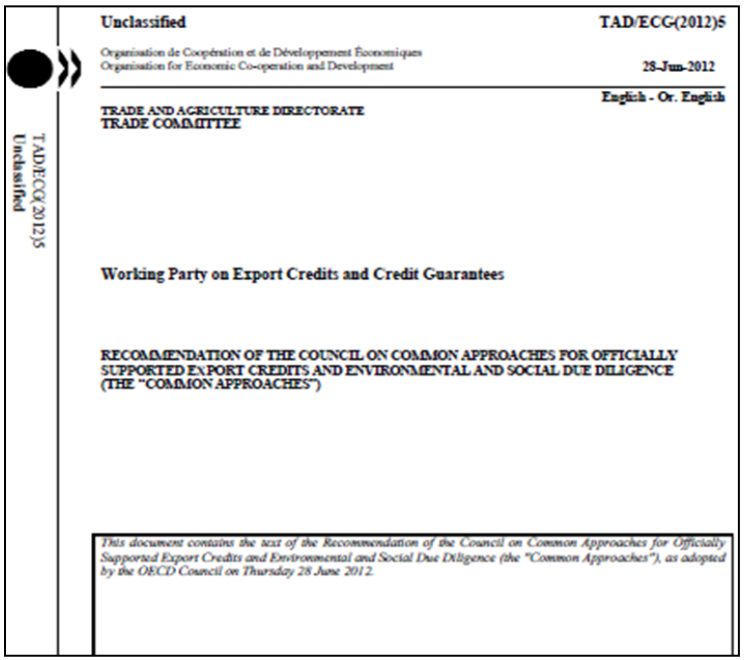
PS7: Indigenous Peoples

PS8: Cultural Heritage

Equator Principles

* 79 members + 1 associate, 35 countries
* EP III effective 4 June 2013
* Project focused (finance, advisory, corporate loans) + bridge loans
* Minimum reporting requirements: ESIA summaries, project category, independent review

OECD Common Approaches



Unclassified TAD/ECG(2012)5

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development
28-Jun-2012

English - Or. English

TRADE AND AGRICULTURE DIRECTORATE
TRADE COMMITTEE

TAD/ECG(2012)5
Unclassified

Working Party on Export Credits and Credit Guarantees

RECOMMENDATION OF THE COUNCIL ON COMMON APPROACHES FOR OFFICIALLY SUPPORTED EXPORT CREDITS AND ENVIRONMENTAL AND SOCIAL DUE DILIGENCE (THE "COMMON APPROACHES")

This document contains the text of the Recommendation of the Council on Common Approaches for Officially Supported Export Credits and Environmental and Social Due Diligence (the "Common Approaches"), as adopted by the OECD Council on Thursday 28 June 2012.

* 34 countries
* Common approaches for officially supported export credits + environmental and social due diligence
* Promote good practice + level playing field
* ESIA reviewed to benchmarks (IFC, WB or other)

Performance Standard 6

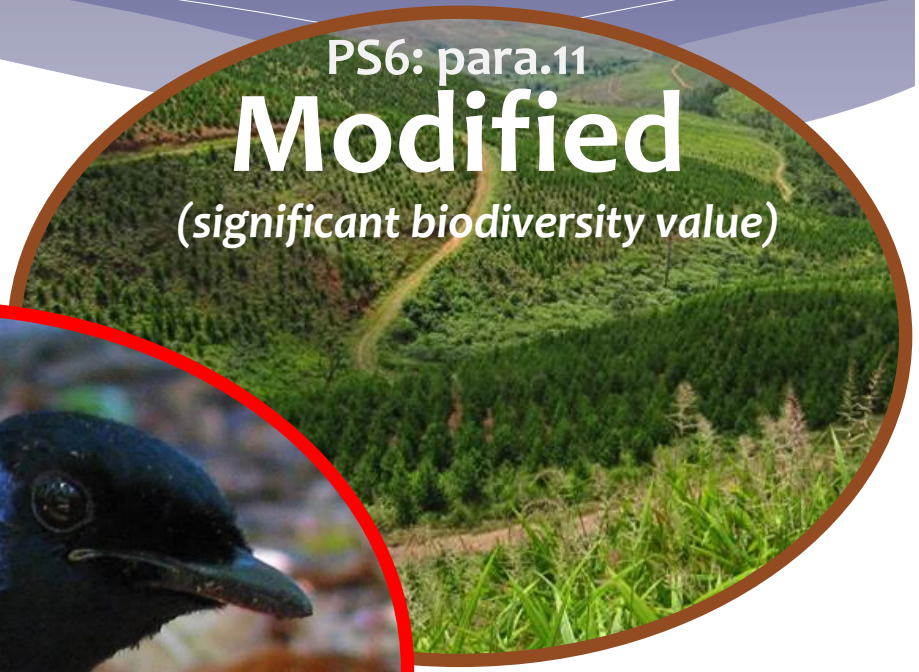
* Biodiversity Conservation & Sustainable Management of Living Natural Resources
* Requirements triggered by defined values
* Guidance Note (GN) = 20% of GN!
* Developed over 3yrs via formal + informal consultation and review
* Perceived as most widely supported standard on biodiversity

Performance Standard 6

* **Objectives:**
  * **To protect and conserve biodiversity**
  * **To maintain the benefits from ecosystem services**
  * **To promote the sustainable management of living natural resources**

Habitats


PS6: para.13
Natural


PS6: para.11
Modified
(significant biodiversity value)


Critical
PS6: para.16

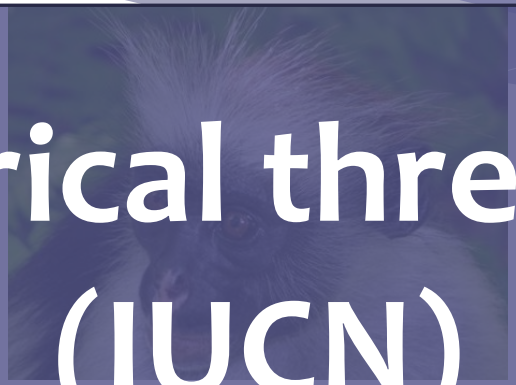
Habitats

* **“terrestrial, freshwater, or marine geographical unit or airway that supports assemblages of living organisms and their interactions with the non-living environment.”**
* **Continuum: natural to modified, often in mosaics**
* **Mitigation hierarchy applies (offsets as a last resort)**
* **Identify additional opportunities for additional habitat enhancement + biodiversity conservation/protection**

Critical Habitat Criteria

PS6: para.16

1. CR + EN Species



2. Endemic + Restricted Range Species

3. Migratory + Congregatory Species

Numerical thresholds (IUCN)

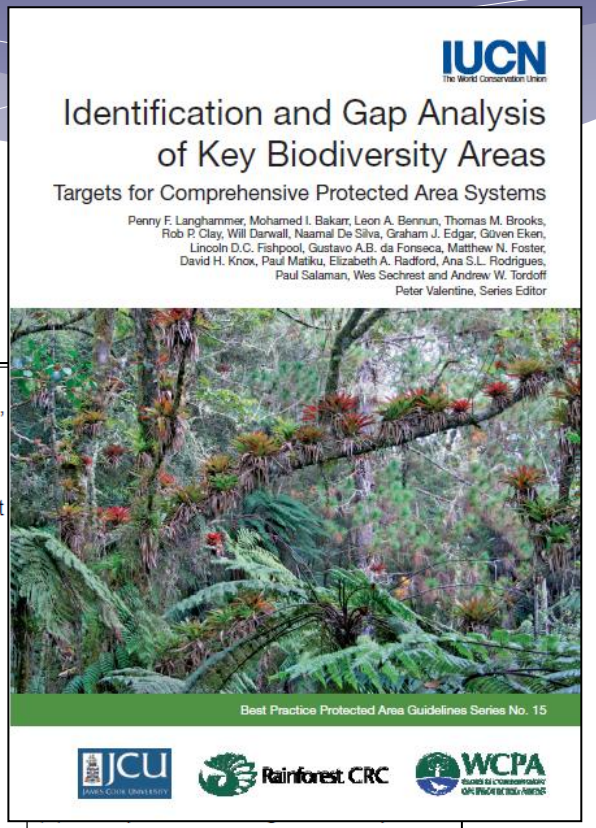
4. Highly threatened + Unique Ecosystems

5. Key Evolutionary processes

Best available info + expert opinion

Critical Habitat Criteria

Criteria	Tier 1	Tier 2
1. Critically Endangered (CR)/ Endangered (EN) Species	(a) Habitat required to sustain ≥ 10 percent of the global population of a CR or EN species/subspecies where there are known, regular occurrences of the species and where that habitat could be considered a discrete management unit for that species. (b) Habitat with known, regular occurrences of CR or EN species where that habitat is one of 10 or fewer discrete management sites globally for that species.	(c) Habitat that supports the regular occurrence of a single individual of a CR species and/or habitat containing regionally- important concentrations of a Red-listed EN species where that habitat could be considered a discrete management unit for that species/ subspecies. (d) Habitat of significant importance to CR or rangin distrib where potent surviv (e) As ap nation conce equiva
3. Migratory/ Congregatory Species	(a) Habitat known to sustain, on a cyclical or otherwise regular basis, ≥ 95 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle where that habitat could be considered a discrete management unit for that species.	
2. Endemic/ Restricted Range Species	(a) Habitat known to sustain ≥ 95 percent of the global population of an endemic or restricted-range species where that habitat could be considered a discrete management unit for that species (e.g., a single-site endemic).	(b) Habitat known to sustain ≥ 1 percent but < 95 percent of the global population of an endemic or restricted-range species where that habitat could be considered a discrete management unit for that species, where data are available and/or



distributions, a provisional threshold is set at ≥5 percent of the global population for both terrestrial and marine species.

(e) Source sites that contribute ≥ 1 percent of the global population of recruits.

Other potential or likely CH triggers

* **Potential: “recognized high biodiversity values”; evaluate on case-by-case basis e.g. reintroduction areas for CR/EN species; areas of high scientific value etc.(GN56)**
* **Likely: Protected Areas (IUCN Ia, Ib + II), World Heritage, KBAs, HCVs (GN57)**

Key issues in CH definition

* CH is independent of project risks + impacts
* Critical Habitat Tiers 1 + 2 (GN58-61)
* Discrete Management Units (DMU) (GN64-65)
* Determination process (GN66-70)
  * Stakeholder consultation + literature review
  * In-field data collection + verification of available info
  * CH Determination (analysis)
* Involve: competent professionals, qualified species + social specialists, external experts

Where did ecosystem services go?

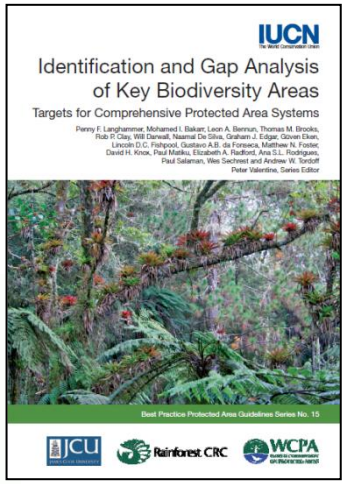
* **Type I (impact/mitigate)**
* **Type II (dependencies/minimize)**
* **Integrated with other PSs (1, 3, 4, 5, 7 + 8)**
* **Emphasizing livelihood + cultural values**
* **Direct management control or significant influence**
* **Ecosystem services review (ESR)**

Key information resources

IUCN

WDPA

areas of biodiversity importance



ibat | FOR IFC

Integrated Biodiversity Assessment Tool

IUCN RED LIST

National Red List

Convention on Biological Diversity

EDGE

Types of challenges

* **PS (or GN) interpretation**
* **National law**
* **Other systems (e.g. NGO or academia)**
* **What does compliance look like?**
* **Finding information**
* **Extent of leverage for implementation**
* **Others?**

Future trends?

* **Greater alignment between WB OPs and IFC PSs (data gathering, enabling conditions)?**
* **Greater national awareness + support for PS6 CH data needs (and enabling conditions more broadly)**
* **Greater NGO and consultant capacity/experience?**
* **Documenting and sharing experience? CSBI?**
* **Future updates?**

Proteus Partners Meeting 2013

Houston, TX, USA


Getting through IFC Performance Standard 6

Theory and Practice for Extractive Industry

Jon Ekstrom, Director, TBC

Proteus Meeting Houston June 2013

Structure of presentation

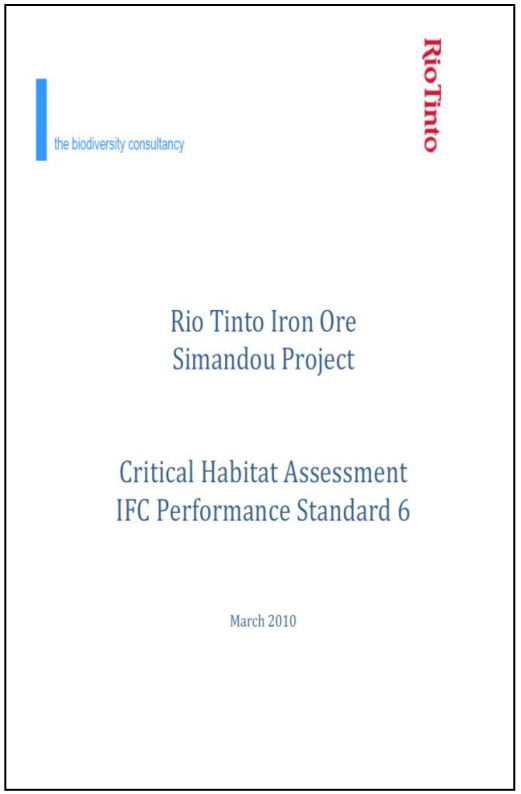
1. What is involved in an IFC PS6 assessmer
2. Oyu Tolgoi Case Study of Critical Habitat Assessment, Mitigation and Offset Desig

TBC experience with IFC Performance Standard 6

Theory with IFC… Developing the 2012 PS6 and Guidance Note 6

Field pilots with clients…

Designed / Piloted first Critical Habitat methods (2009 Rio Tinto Guinea)


the biodiversity consultancy

RioTinto

Rio Tinto Iron Ore
Simandou Project

Critical Habitat Assessment
IFC Performance Standard 6

March 2010

Essential IFC PS6 for Oil/Gas and Mining Industry

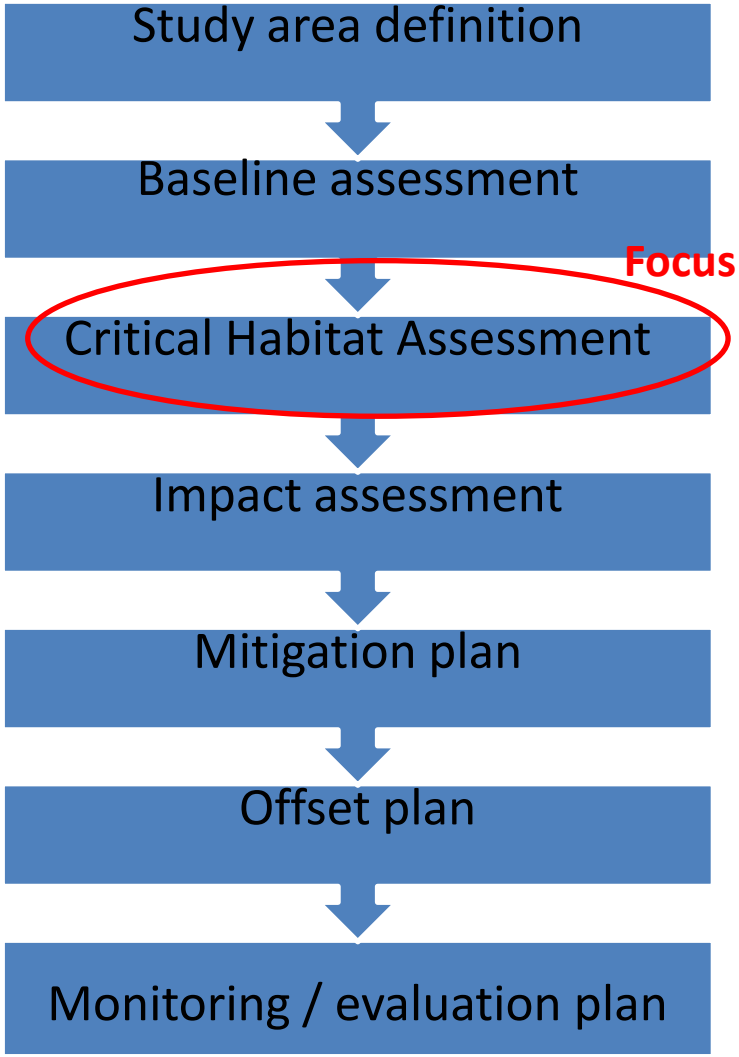
Core PS6 = Habitat Identification and Mitigation

- Study Area / DMU delineation
- Baseline Assessments
- Habitat Assessments: Critical / Natural / Modified
- Quantified Impact Assessment
- Mitigation Plan
- Offset Plan
- BAP and Monitoring and Evaluation Plan

Additional PS6 activities

- Ecosystem Services Mitigation
- Protected Area Strategy
- Invasive Species Strategy

A. Core PS6 is similar to EIA



Definition of 'Discrete Management Units' DMU

What biodiversity is there in the DMU?

Focus for this presentation

Which of this biodiversity constitutes Critical Habitat and Natural habitat?

What are the predicted impacts?

How can these impacts be mitigated?

How can we offset the impacts that cannot be mitigated?

How can we track performance?

Critical Habitat Screening vs Assessment

IBAT and IUCN Desktop Data

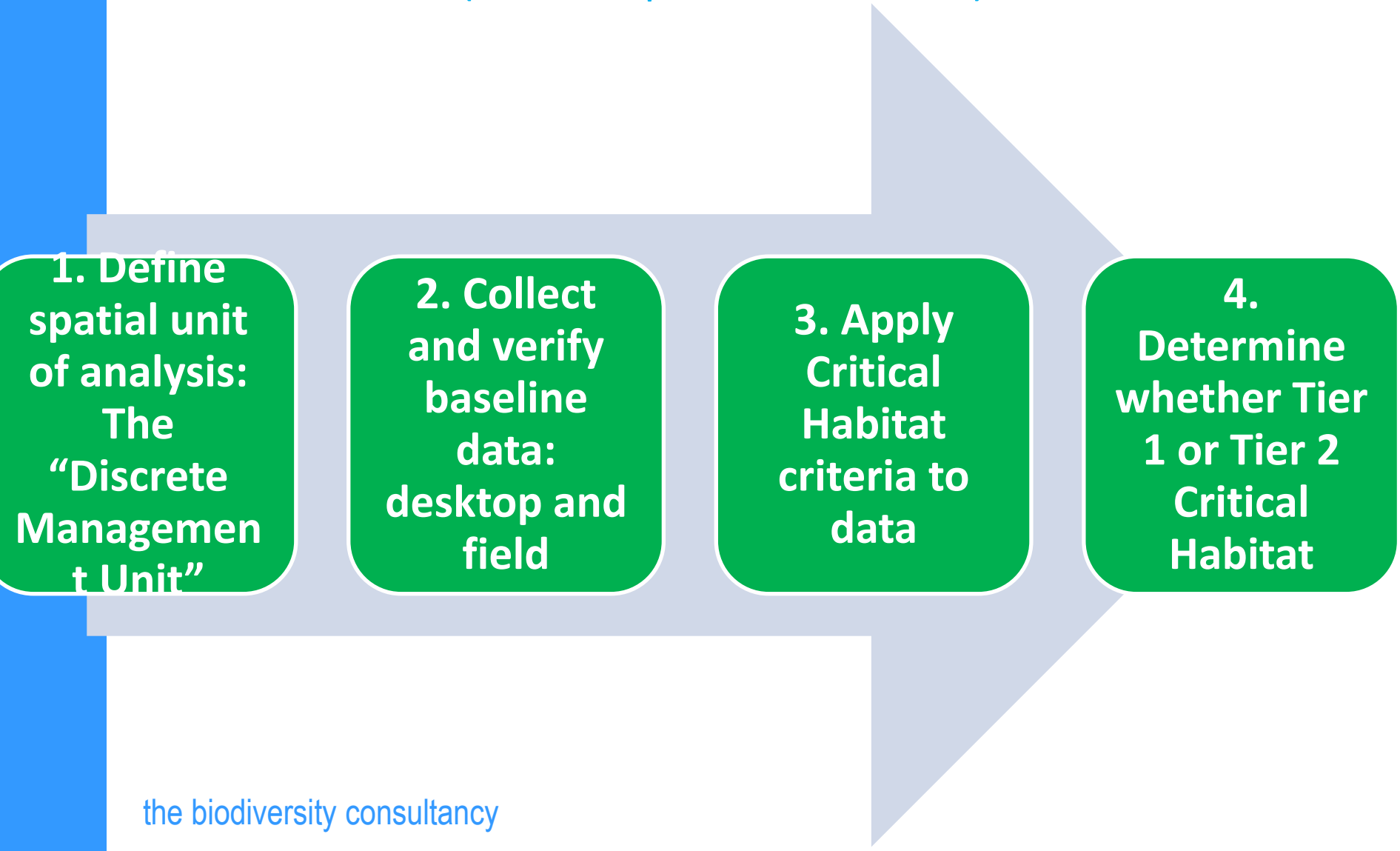
Critical Habitat Screening

- **Tells you if CH is likely to be present**
- **Can be completed desktop** (using spatial biodiversity data layers: IBAT, IUCN Red List polygons, habitat maps, other available local data)

Critical Habitat Assessment

- **Tells you which biodiversity qualifies as CH**
- **Requires fieldwork**
- **Is used to inform impact assessment, mitigation and offset design**

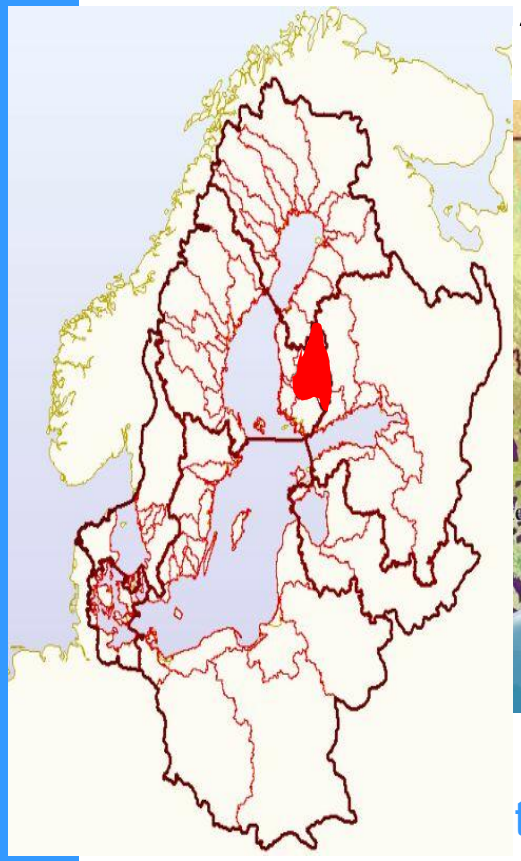
Four steps to Critical Habitat Screening / Assessment (same steps, different data)

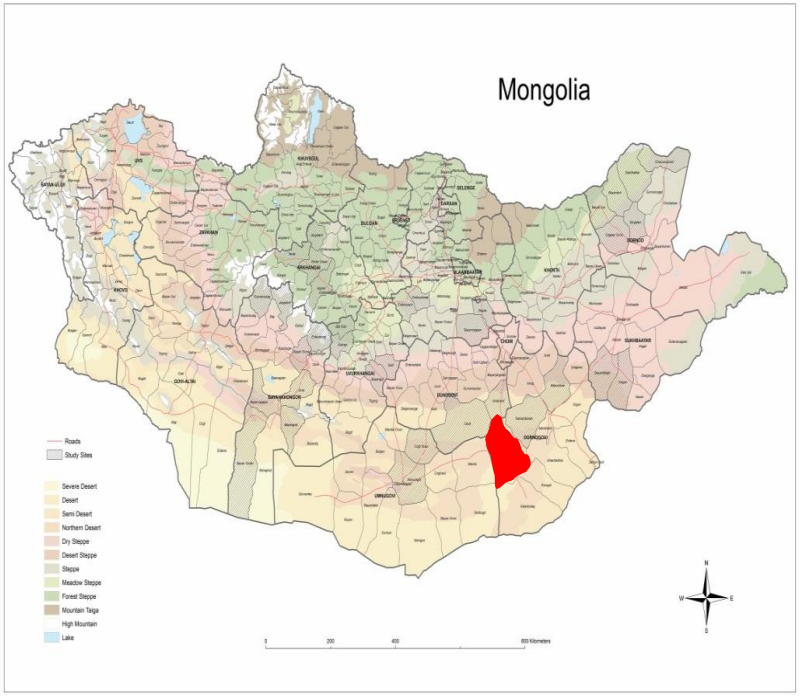


Step 1. Define the study area 'Discrete Management Unit' for the project

- The DMU is the project study area defined on a landscape scale using either biological or political boundaries
- Careful definition required: Critical Habitat Assessment will be based on the DMU

s can be chosen for different species / biodiversity to be





tancy

Step 2. Collect and verify baseline data: desktop and field

Desktop data for CH screening:

- Use IBAT and other desktop data to determine if CH is likely to be present
- Use this information to focus the fieldwork / TOR of consultants

Field data for CH Assessment

- Use IBAT species grid to identify likely target species
- Provide PS6 specific TOR to consultants for SEIA field surveys
- Focus on target species CR and EN and Restricted-Range; and Natural Habitats.
- Determine species occupancy of habitats in the study area

Step 3: Screen biodiversity at the site using Critical Habitat criteria

1. Globally or nationally Critically Endangered or Endangered species;
2. Restricted-range or endemic species;
3. Concentrations of migratory and congregatory species;
4. Highly-threatened and unique ecosystems;
5. Key evolutionary processes.

Critical Habitat is identified irrespective of the type or scale of the development or possible impacts

See: http://www.thebiodiversityconsultancy.com/wp-content/uploads/2012/07/Critical-Habitat-a-concise-summary.pdf
the biodiversity consultancy

Step 4: Tier 1 or Tier 2 Critical Habitat?

- highest importance
- Development and operation difficult *(depending on the type of infrastructure and the company's mitigation strategy and internal capacity)*
- In many cases impacts not offsetable

Tier 1 Critical Habitat

- high importance
- development may be possible *(depending on the type of infrastructure and the company's mitigation strategy and internal capacity)*
- offsets may be possible under some circumstances.

Tier 2 Critical Habitat

Take home messages on Critical Habitat

Before investment decision: Critical Habitat **Screening** can be completed desktop using appropriate data layers

After investment decision: Critical Habitat **Assessment** requires fieldwork

Critical Habitat remains Critical Habitat whether triggered by one EN species or twenty EN species

But some Critical Habitat ('TIER 1') is very difficult to operate within due to its UNIQUENESS (e.g. holding 10% of the world's Tigers)

Critical Habitat is not a No Go for development, but a warning sign for careful mitigation

B. Meeting PS6 Ecosystem Service requirements

Critical Habitat Assessment	Ecosystem Service Assessment
Considers areas of high biodiversity value	Considers Impacts and Dependencies of project on nature
e.g. habitat required for a highly threatened frog species	e.g. clean water supply for drinking
Aim: to prevent any adverse impacts to identified critical habitat	Aim: to maintain function and value of identified priority ecosystem services

B. Steps are based on the WRI Corporate Ecosystem Services Review (IPIECA guidance also..)

Stage 1

Identify priority ecosystem services

- Type 1 priority ES: "essential to affected communities, adversely impacted by the project"
- Type 2 priority ES: ES "essential to the project and that can be managed by the project"

Stage 2

Determine current states and trends

- What changes will occur?
- How to mitigate these?

Stage 3:

Develop appropriate mitigation strategies

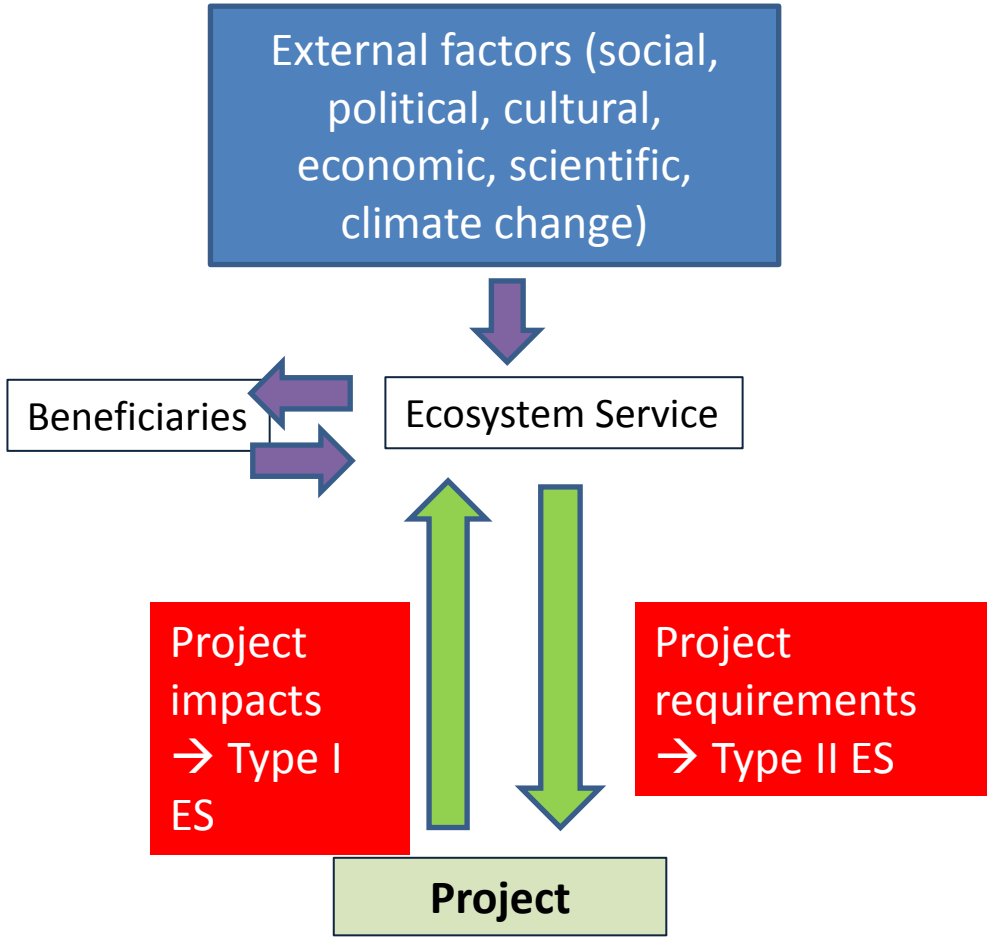
Strategies should:

- Be risk averse
- Focus on mitigation, not compensation
- Involve extensive stakeholder consultation
- Use an adaptive management

Aim of mitigation:
- affected communities' quality of life does not change (type 1)
- impacts minimized, & measures developed increase efficiency of ES (type 2)

Conceptual framework for a PS6 Ecosystem Service Assessment

The ability of an ecosystem to provide the required ecosystem services depends on external factors as well as the impacts of the users of the service



Conforming with PS6 ES requirements (PS6 paragraph 25)

The client should maintain the value and functionality of services considered of priority importance for the well-being of affected communities.

The client should minimize impacts to maintain the ecosystem services essential to the project over its lifetime

These requirements need to be fulfilled in the face of changes external and to a large degree outside the control of the project.

Several Performance Standards discuss Ecosystem Services

PS 1: Indirect impacts on ES must be accounted for in the Impact Assessment

PS 6: Explains client requirements for the Ecosystem Service Assessment

PS 4,5,7,8 Provides guidelines to client responsibilities for mitigation when direct impacts

- affect Community health, safety and security (PS4);
- result in the loss of ,or access to, ES for people economically displaced by the project (PS5);
- result in the loss of or access to ES for Indigenous Peoples (PS7);
- commercialize knowledge, culture and customs of Indigenous Peoples (PS7);
- affect cultural heritage (PS8).

For Type I priority ecosystem services:

Clients will implement the mitigation hierarchy to avoid impacts, and if impacts are unavoidable, clients will minimize them and implement mitigation measures to maintain the "*value and functionality of priority services*".

Compensation should only be used if there is still residual damage after implementation of the mitigation hierarchy (GN141).

i.e. The outcome should be that Affected Communities do not notice any change in their well being after the mitigation measures are applied.

For Type II priority ecosystem services:

Clients should minimize impacts and implement measures that 'increase resource efficiency' of their operations (paragraph 25 of PS6).

This requirement refers to actions that clients can implement within the natural environment to maintain the services that ecosystems provide to business operations.

i.e. maintain forest cover to reduce sediment load in the reservoir

C. Meeting PS6 requirements for legally protected areas and 'internationally recognised areas'

Paragraph 20 states:

Legally Protected and Internationally Recognized Areas

20. In circumstances where a proposed project is located within a legally protected area or an internationally recognized area, the client will meet the requirements of paragraphs 13 through 19 of this Performance Standard, as applicable. In addition, the client will:

- *Demonstrate that the proposed development in such areas is legally permitted;*
- *Act in a manner consistent with any government recognized management plans for such areas;*
- *Consult protected area sponsors and managers, Affected Communities, Indigenous Peoples and other stakeholders on the proposed project, as appropriate; and*
- *Implement additional programs, as appropriate, to promote and enhance the conservation aims and effective management of the area*

A simple approach..

- **Determine project overlap with Protected Area**
- **Demonstrate project is permitted by law**
- **Carry out consultation with relevant stakeholders e.g. PA managers**
- **Contribute to existing PA management plan; or develop additional biodiversity conservation management programs**
- **Comply with Core PS6 (Critical / Natural Habitat) where necessary.**

D. Meeting PS6 requirements for invasive spe

Deliberate introduction

A species can only be introduced if it is
a) permitted under the appropriate regulatory framework AND
b) An invasive species risk assessment does not consider it high risk.

Accidental introduction

Measures must be in place to avoid accidental introductions

Accidental spread

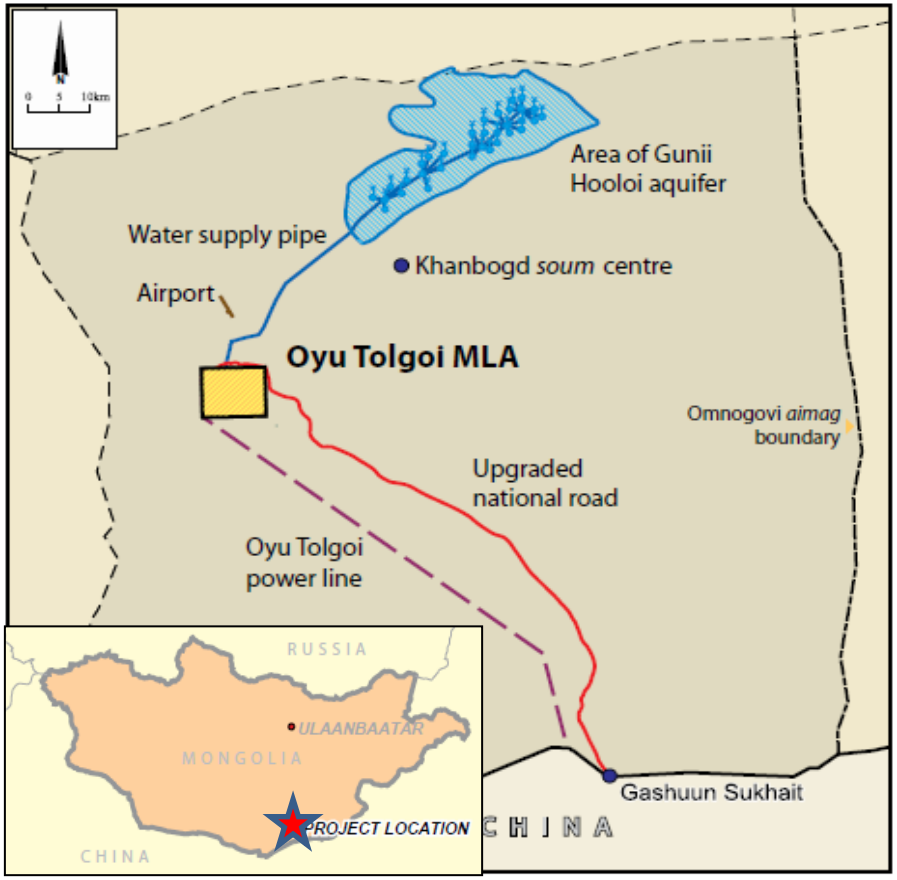
Measures must be in place to
a) manage invasives already present AND
b) avoid their spread throughout the site

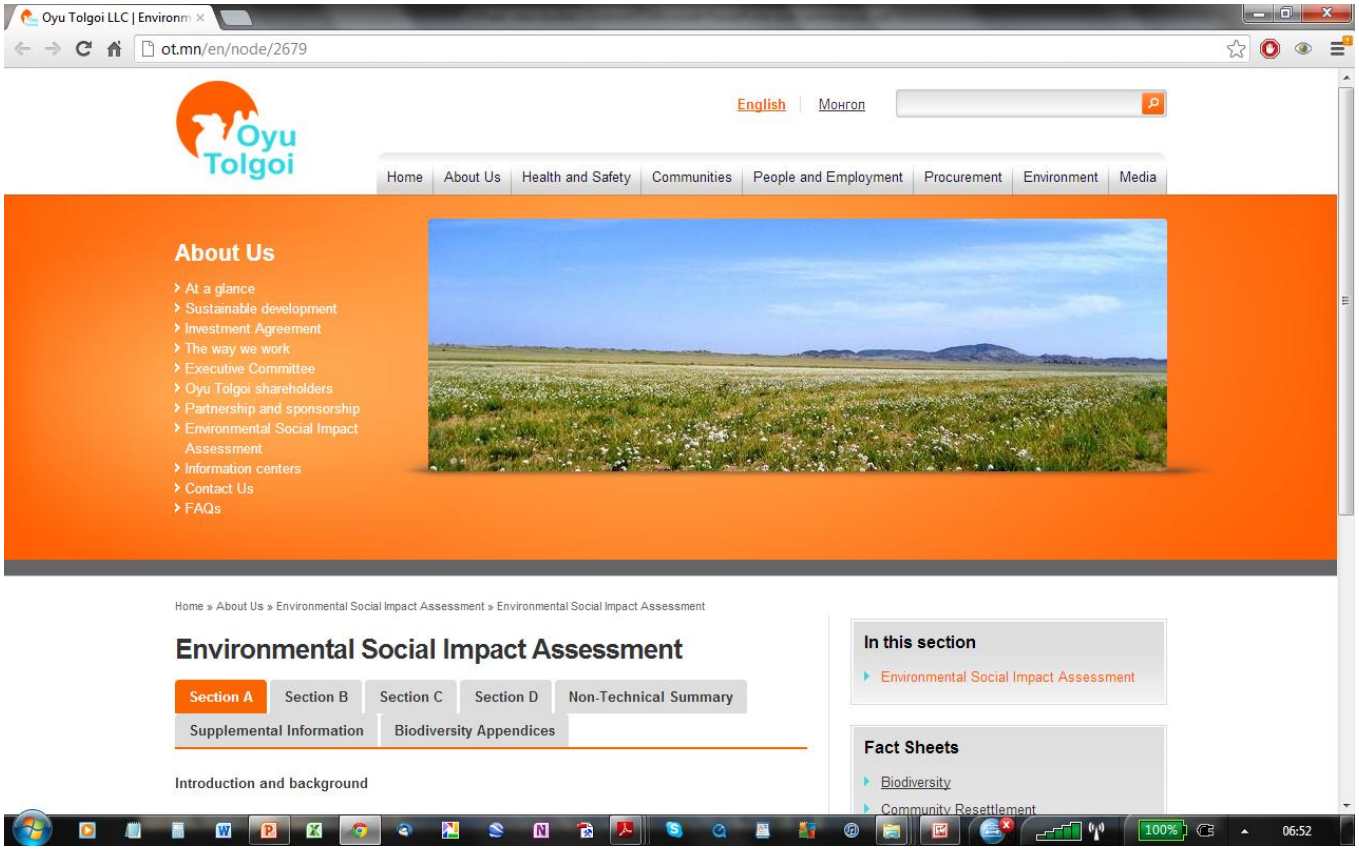
PS6 Case Study:
Oyu Tolgoi LLC, South Gobi, Mongolia

With a focus on Species Criterai 1-3

Oyu Tolgoi Copper / Gold Mine

- First project to disclose documents under new 2012 PS6
- Rio Tinto managed copper and gold mine
- Production due in 2013: 40% Mongolia's GDP
- Commitment to Net Positive Impact
  - Mitigation
  - offsets





- ESIA http://www.ot.mn/en/about-us/environmental-social-impact-assessment

- The biodiversity documentation on PS6 (Appendices to the ESIA): http://www.ot.mn/en/node/2679

EDC
the biodiversity consultancy

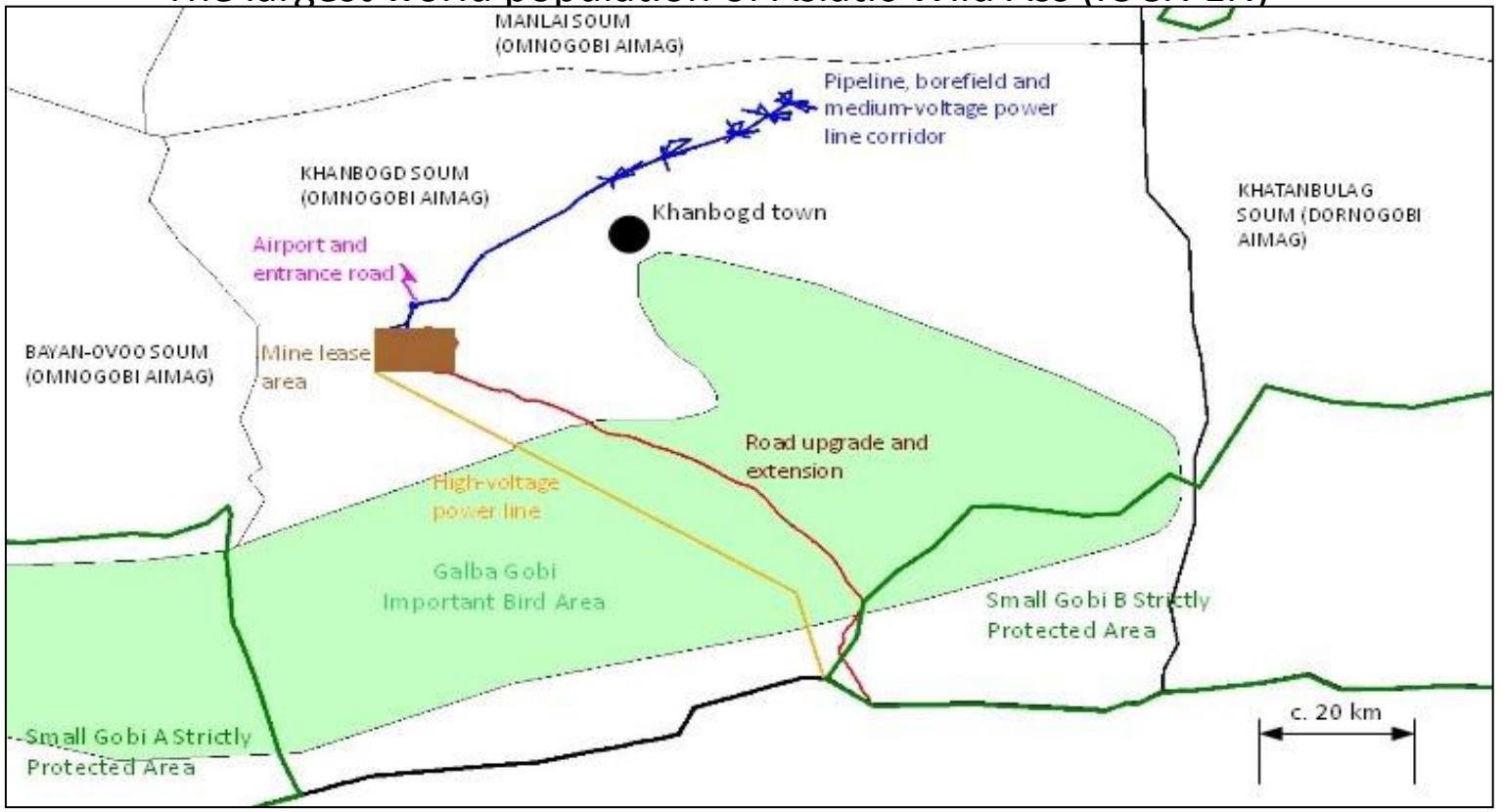
IFC

European Bank
for Reconstruction and Development

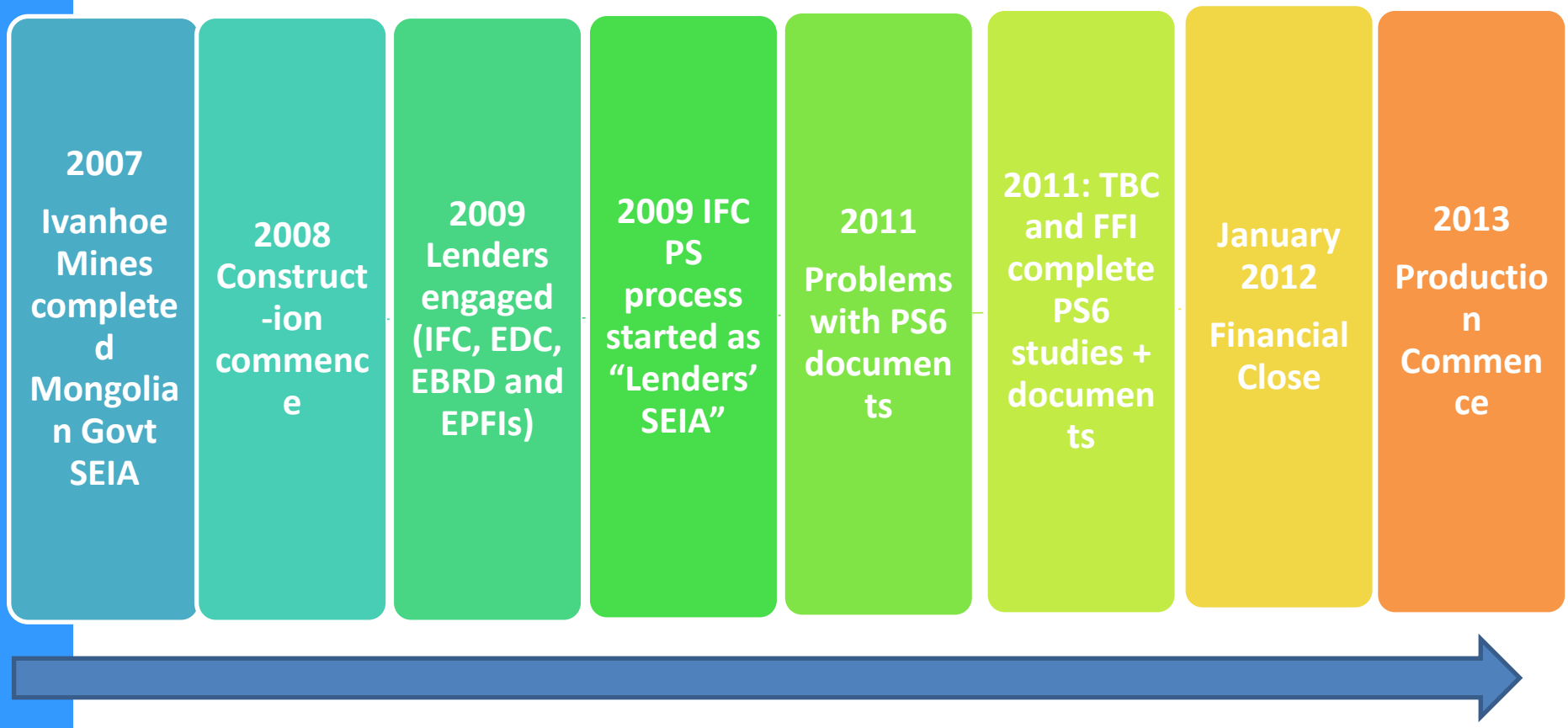
Large scale infrastructure within the ranges of IUCN-listed mammals and birds

Infrastructure in a regional biodiversity context

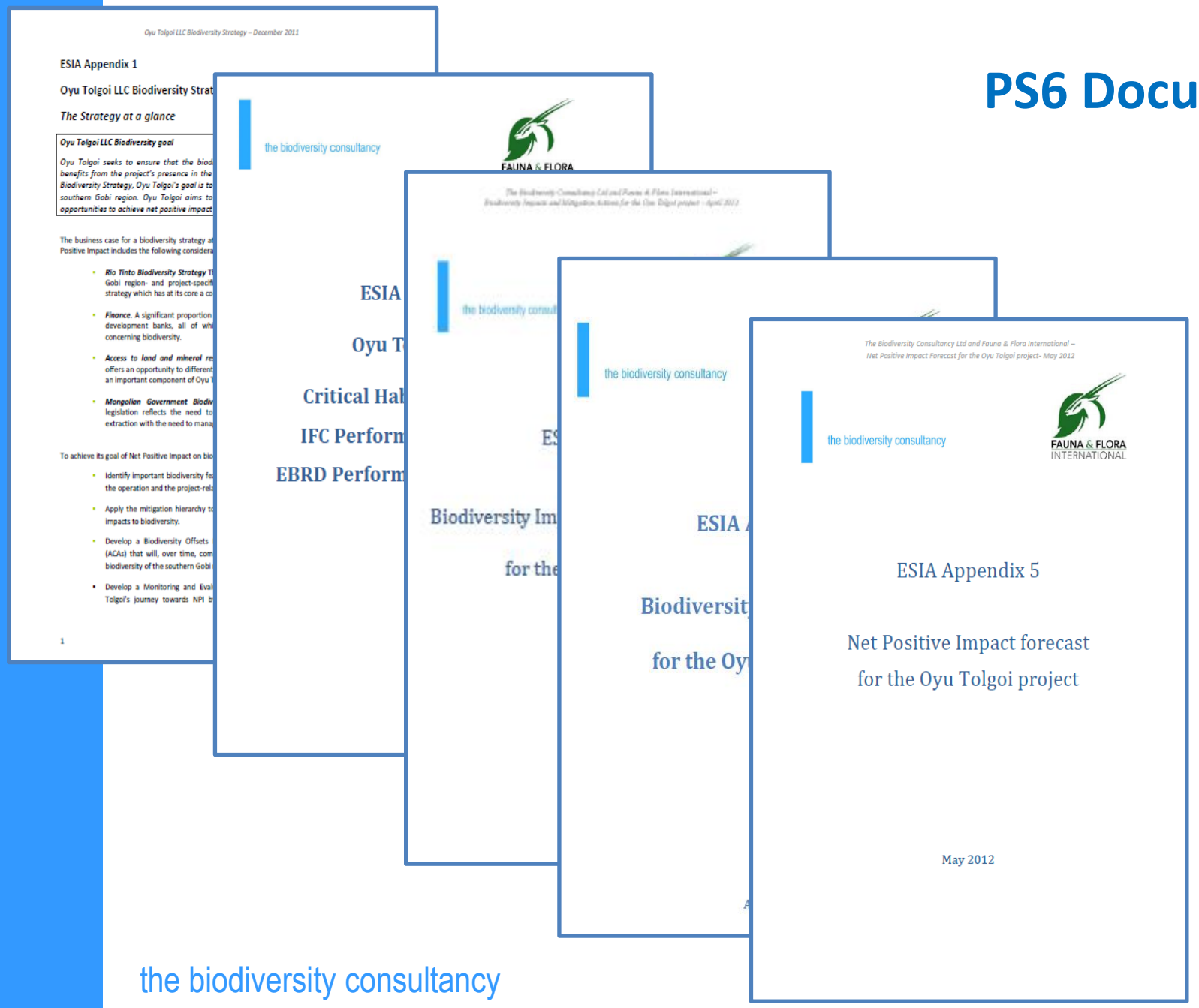
- 85 km^2 mine lease area; 200 km road; 200km powerline; Town expansion; airport
- Infrastructure crosses
  - An IBA
  - Edge of a Protected Area
  - The largest world population of Asiatic Wild Ass (IUCN EN)



Oyu Tolgoi SEIA vs PS6 documentation timeline



PS6 Documentation



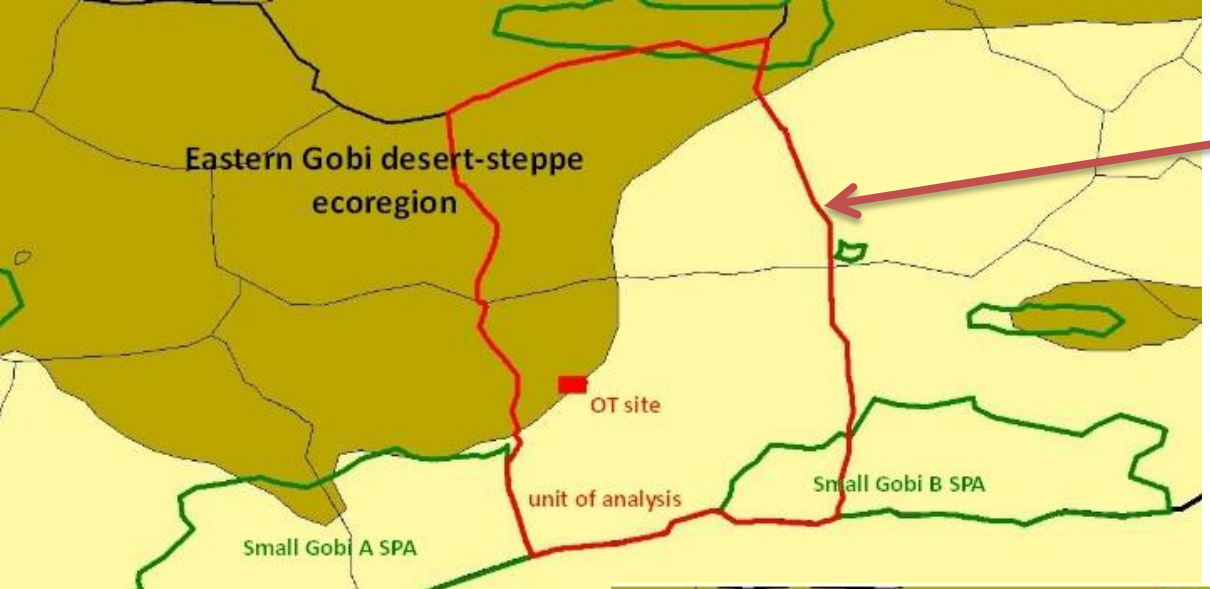
Taxonomic group	Biodiversity feature	Scientific name	Critical Habitat	IUCN Red List status	National Red List status	Status in unit of analysis
Plant (herb)	18 'very rare' plants such as Mongolian Chesney	*Chesneya/Chesniella mongolica*	Tier 2	-	EN?	Patchily distributed throughout – assumed here to represent all 18 'very rare' plants known or predicted from the project area
Mammal (carnivore)	Snow Leopard	*Panthera uncia*	-	EN	EN	Very rare 'resident'
Mammal (ungulate)	Asiatic Wild Ass	*Equus hemionus*	Tier 1	EN	EN	Nomadic 'resident'
Mammal (ungulate)	Argali	*Ovis ammon*	Tier 2	NT	EN	Localised resident
Mammal (ungulate)	Goitered Gazelle	*Gazella subgutturosa*	Tier 2	VU	VU	Migratory 'resident'
Mammal (ungulate)	Mongolian Gazelle	*Procapra gutturosa*	-	LC	EN	Rare visitor from the east
Mammal (rodent)	Long-eared Jerboa	***Euchoreutes naso***	-	LC	VU	Likely very rare in far south Undai
Bird	Swan Goose	*Anser cygnoides*	-	VU	NT	Likely a regular migrant over the area
Bird	Ferruginous Duck	*Aythya nyroca*	-	NT	VU	Likely a regular migrant over the area
Bird	Short-toed Snake-eagle	*Circaetus gallicus*	Tier 2	LC	EN	Breeds
Bird	Saker Falcon	*Falco cherrug*	-	VU	VU	Breeds
Bird	Egyptian Vulture	*Neophron percnopterus*	-	EN	LC	Probably breeds
Bird	Great Bustard	*Otis tarda*	-	VU	VU	Regular migrant (stops over in the area)
Bird	Houbara Bustard	*Chlamydotis undulata*	-	VU	VU	Breeds
Bird	Relict Gull	*Larus relictus*	-	VU	EN	Likely a rare migrant over the area
Bird	Pallas' Sandgrouse	*Syrrhaptes paradoxus*	-	LC	LC	Breeds
Bird	Mongolian Accentor	*Prunella koslowi*	-	LC	LC	Very localised breeder
Bird	Mongolian Ground-jay	*Podoces hendersoni*	-	LC	VU	Breeds
Bird	Yellow-breasted Bunting	*Emberiza aureola*	-	VU	NT	Likely a regular migrant
Species Assemblage	Granite Outcrop Floral Communities	n/a	Tier 2	n/a	n/a	Khanbogd and other massifs
Habitat	Riverine Elm Trees	n/a	-	n/a	n/a	Mostly in Undai riverbed
Habitat	Ephemeral Lakes and Pools	n/a	-	n/a	n/a	Scattered near to hills in south
Habitat	Tall Saxaul Forest	n/a	-	n/a	n/a	Mostly in borefield and depressions
Habitat	Eastern Gobi desert-steppe	n/a	-	n/a	n/a	Major habitat type in the region – widespread

Oyu Tolgoi

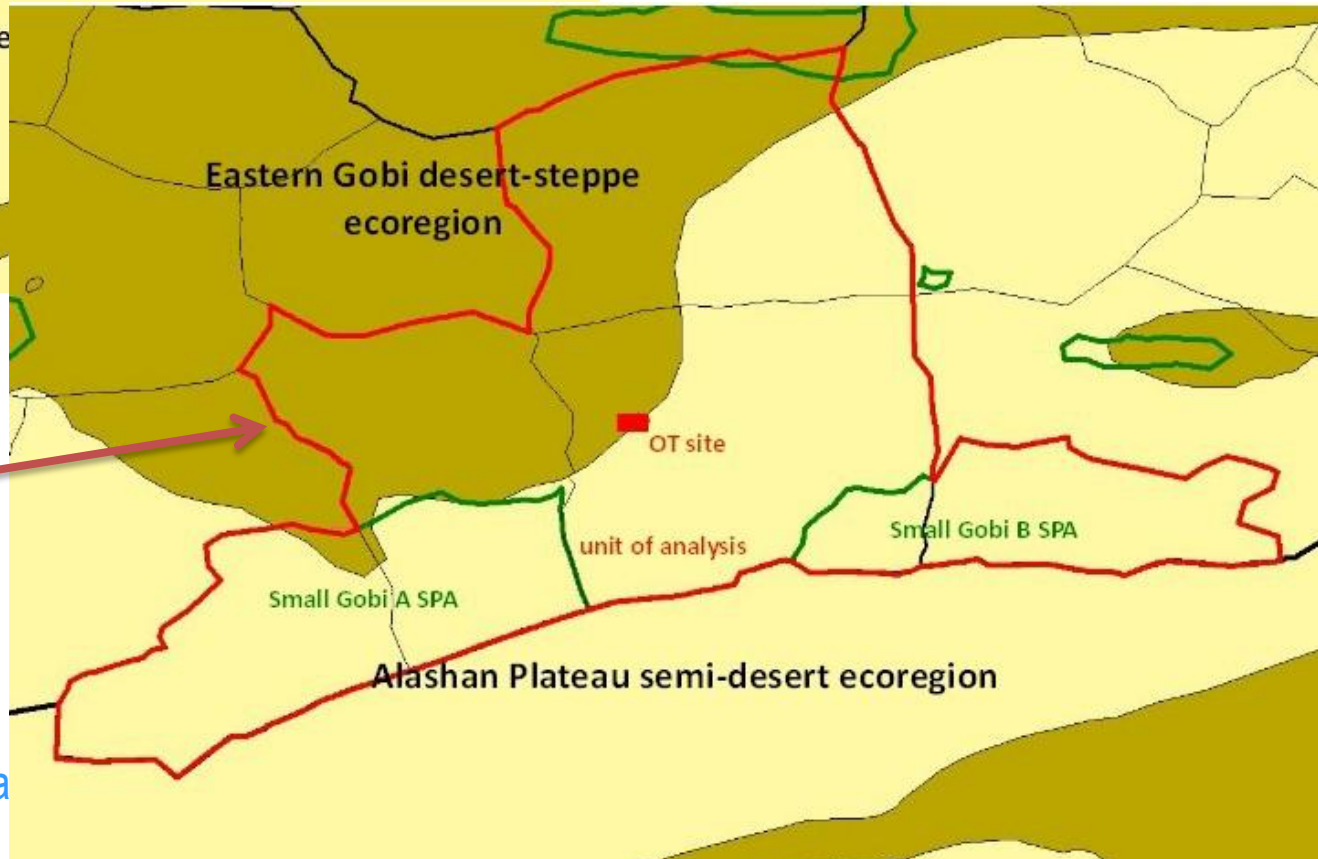
Critical Habitat Assessment

Priority Biodiversity Features screened Against Critical Habitat Criteria

- IBAT
- IUCN Red List
- Local Data



DMU for birds and plants 27,000 sqkm

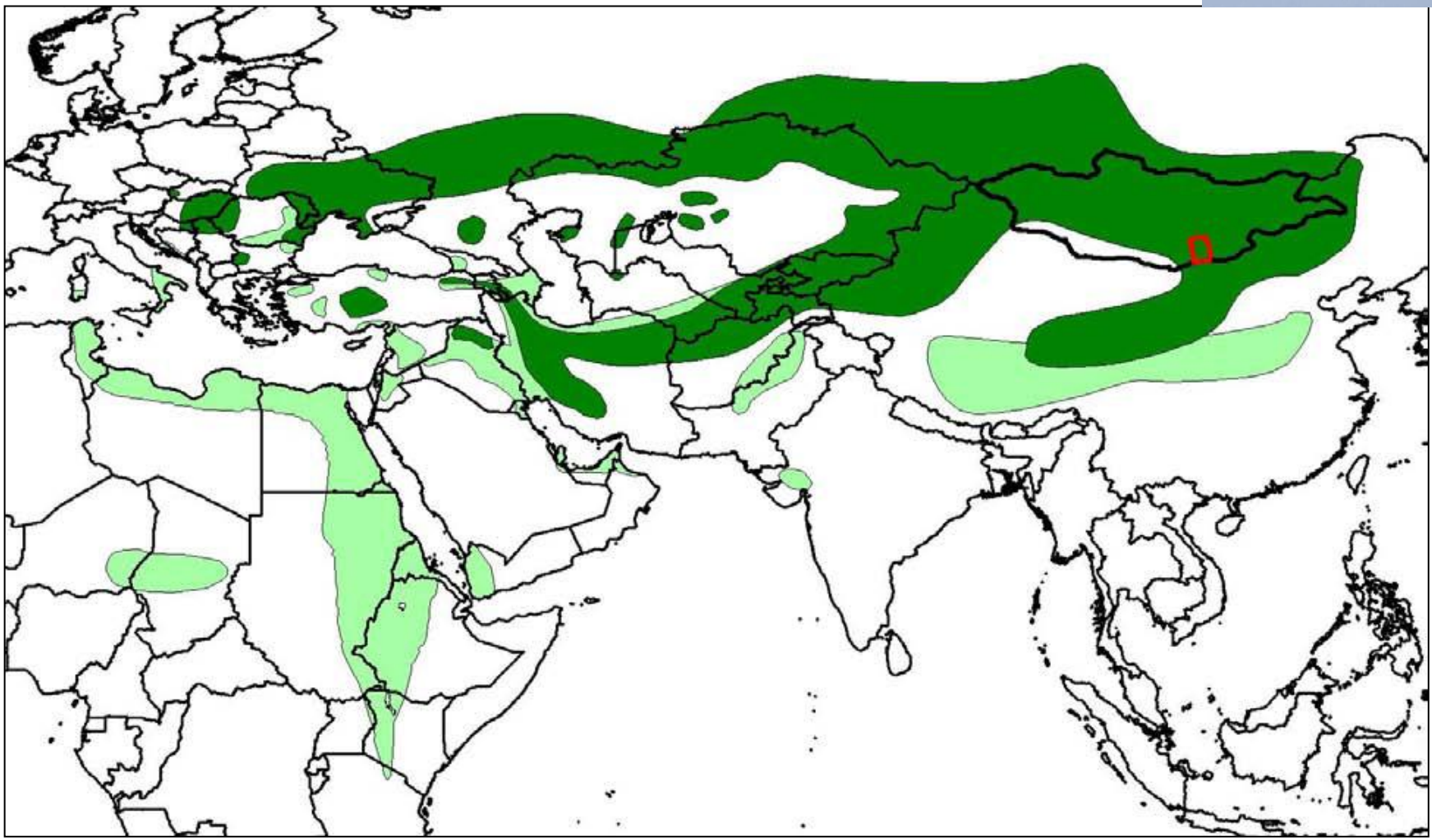


DMU for nomadic mammals 51,000 sqkm

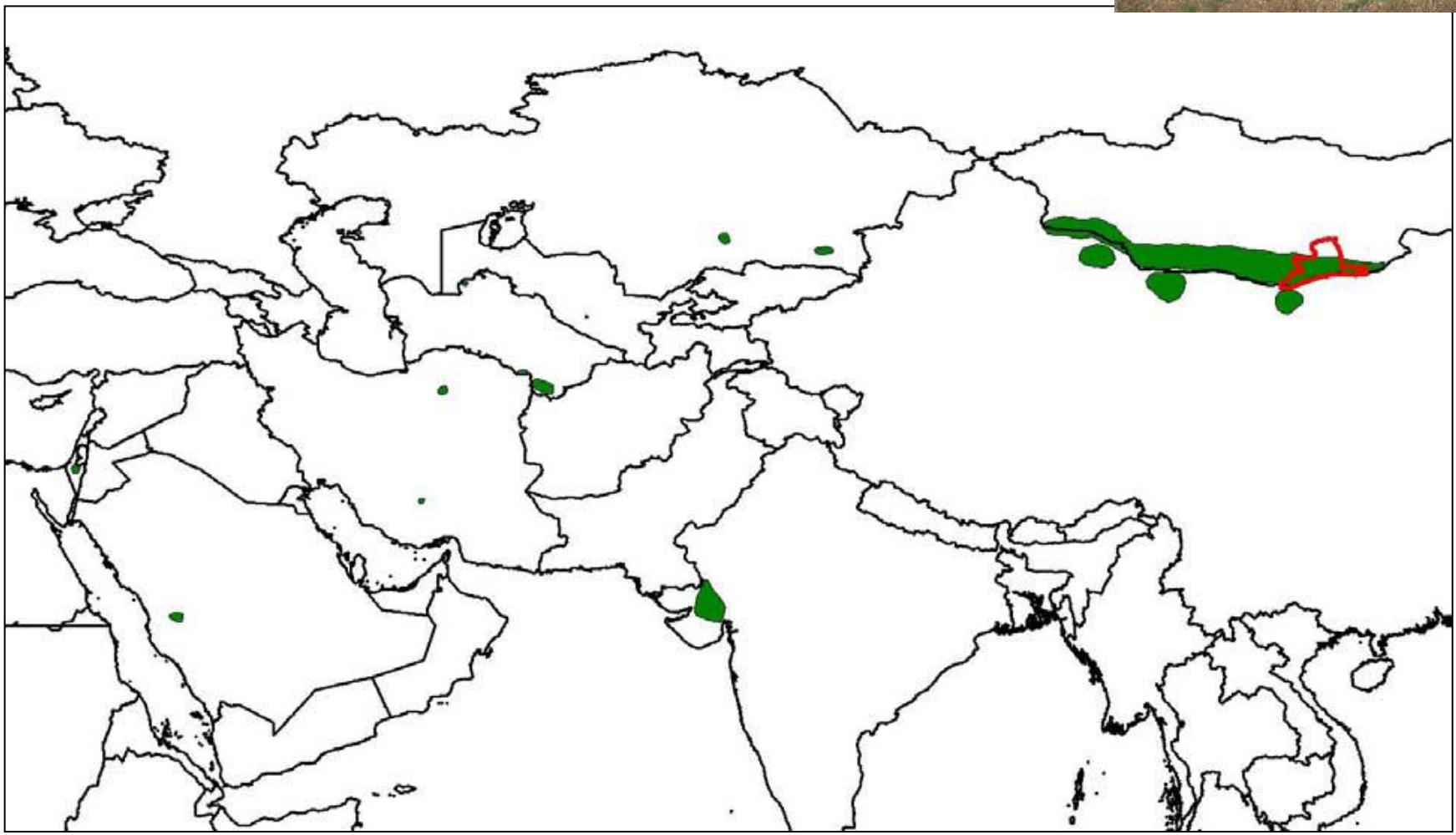
y consulta

Saker Falcon *Falco cherrug*: does not trigger Cri

Habitat: <1%



Asiatic Wild Ass *Equus hemionus*: triggers Critical Habitat at this site: >10%



Challenges of the Oyu Tolgoi Critical Habitat Assessment

Gobi desert vegetation types poorly distinguished

Priority species are nomadic species e.g. Asiatic Wild Ass: use very large areas over decades

Spatially and temporally dynamic ecosystem

Project baseline data patchy in space, time and scope

- Whole DMU identified as Critical Habitat due to
  - nomadic species requirements
  - spatial / temporal dynamics

Challenges of Oyu Tolgoi residual impact assessment

Diverse infrastructure and diverse biology = species-specific responses

1. **Calculate species-specific Direct impacts**
   - Powerline collision impacts on Houbara bustard
2. **Calculate species-specific Indirect impacts**
   - Impacts on ungulates
     - Avoidance of roads
     - Connectivity of populations
3. **Assess species-specific secondary impacts**
     - induced access and immigration
     - increased illegal hunting
     - increased populations of feral predators

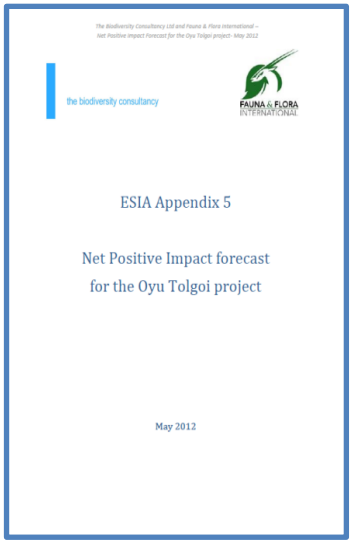
Design of species-specific mitigation options

Reducing offset requirements through….

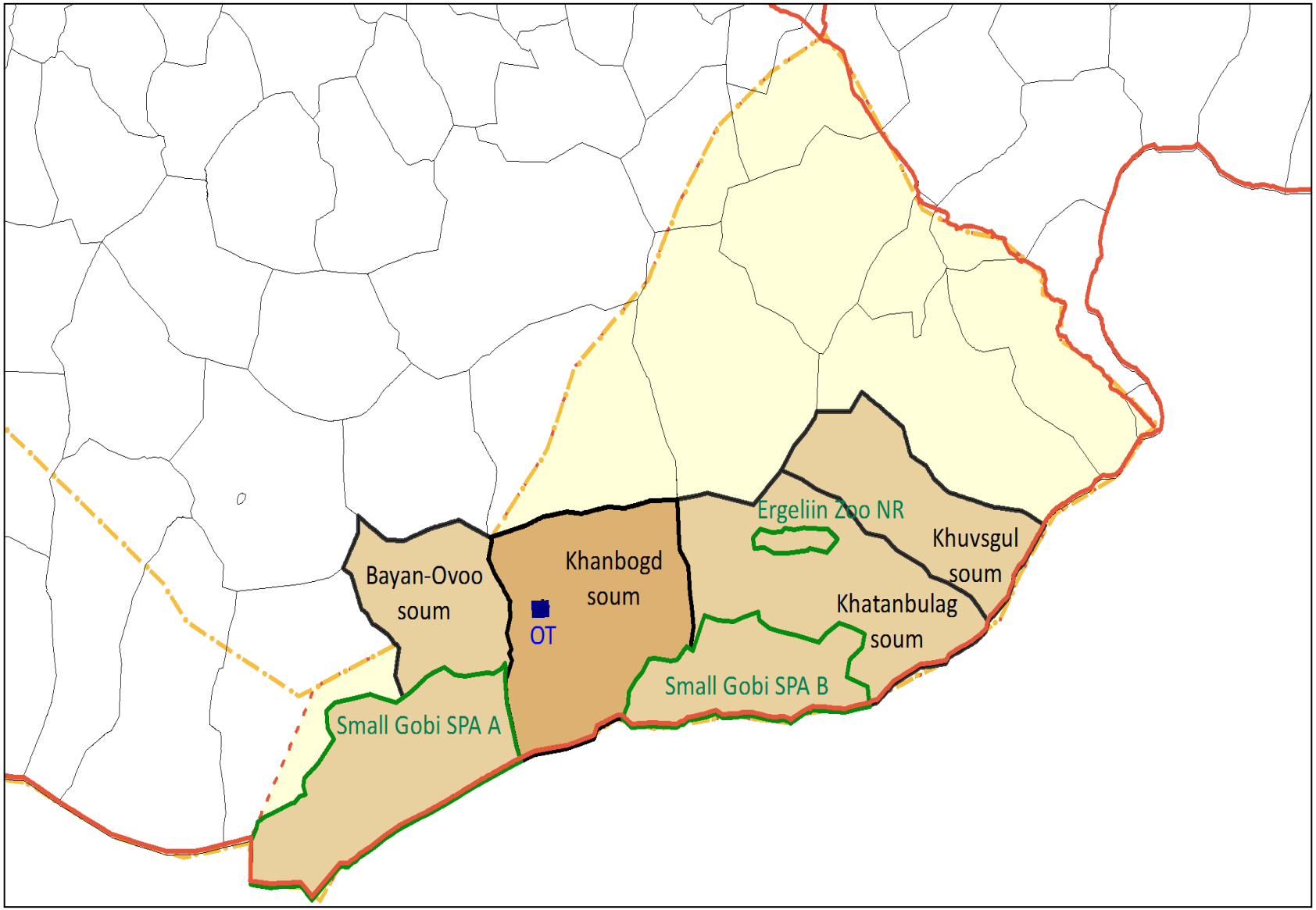
- Powerline flight-diverter mitigation on Houbara bustard
- Underpass design for nomadic ungulates
- Speed controls on roads
- Control of bushmeat transport
- Control of feral predators e.g foxes
- Restore key vegetation e.g. Saxaul, Elm trees along watercourses

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
Granite Outcrop Floral Communities[4]	0			0	0	0	0	0	Yes
Riverine Elm Trees	0					+[5]	+[5]	+[5]	Yes[6]
Tall Saxaul Forest	+	?	-	+	+	+	+	+	Yes[7]
Eastern Gobi desert-steppe	5.5	0.9		5	0	9	9	4	Yes
Alashan Plateau semi-desert	3.5	0.9		3	0	12	12	9	Yes



The PS6-approved Oyu Tolgoi offset plan : 50,000 sqkm of anti-poaching and rangeland mgt



Offset Actions: Reduced illegal hunting and collecting

- Implement 5 Mobile Anti-Poaching Units based on WWF approach
- Build Mongolia government capacity in wildlife crime

Offset Actions: Improved rangeland management

- Support herders to reduce stocking ratios
- Compensate herders for opportunity costs
- Develop an alternative livelihoods programme for herders
- Revitalise soum-level grazing plans

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ESIA Appendix 4

Biodiversity offsets strategy

for the Oyu Tolgoi project

April 2012

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 ?
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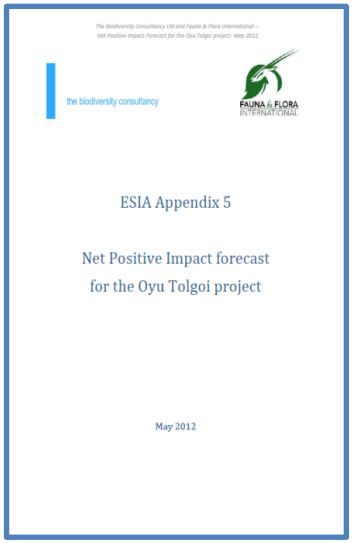
Riverine Elm Trees	0					+[5]	+[5]	+[5]	Yes[6]
Tall Saxaul Forest	+	?	-	+	+	+	+	+	Yes[7]
Eastern Gobi desert-steppe	5.5	0.9		5	0	9	9	4	Yes
Alashan Plateau semi-desert	3.5	0.9		3	0	12	12	9	Yes



Constraints in OT offset design

Offset sites constrained by distribution of Asiatic Wild Ass

Offset projects constrained by needs of traditional cultural herding

Offsets further constrained by cumulative impacts

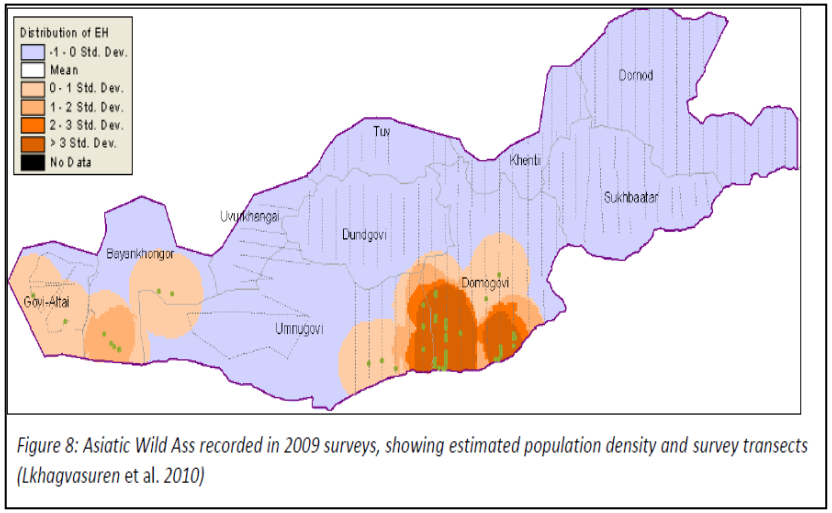


Figure 8: Asiatic Wild Ass recorded in 2009 surveys, showing estimated population density and survey transects (Lkhagvasuren et al. 2010)

No Net Loss Feasibility Funnel

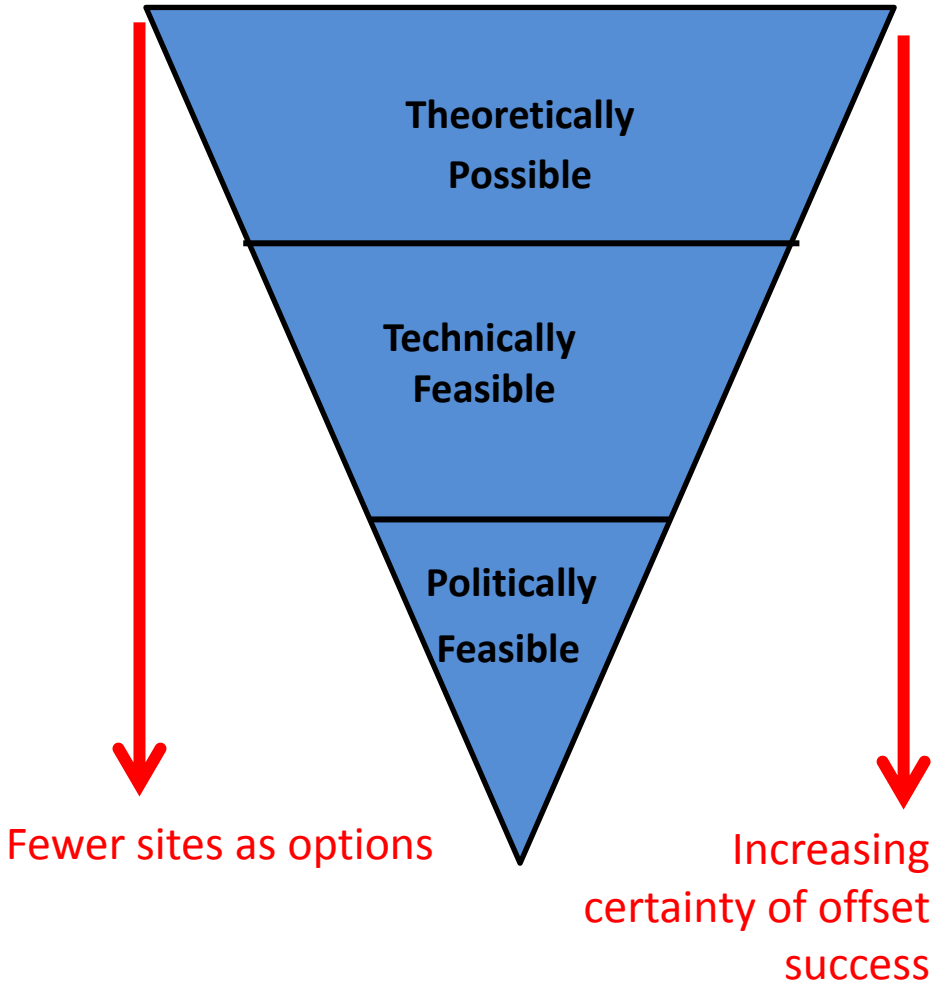
Assess Biological, Social, Economic and Political factors

- What possible sites exist?

– distribution of species + habitats

- What proven conservation methods exist?

- Where can such tools work politically / socially /economically?



Take home messages of the OT IFC PS6 experience

First publicly available documentation of Net Gain / No Net Loss assessments against the 2012 IFC PS6

Technical Feasibility of No Net Loss was key to the loan agreements

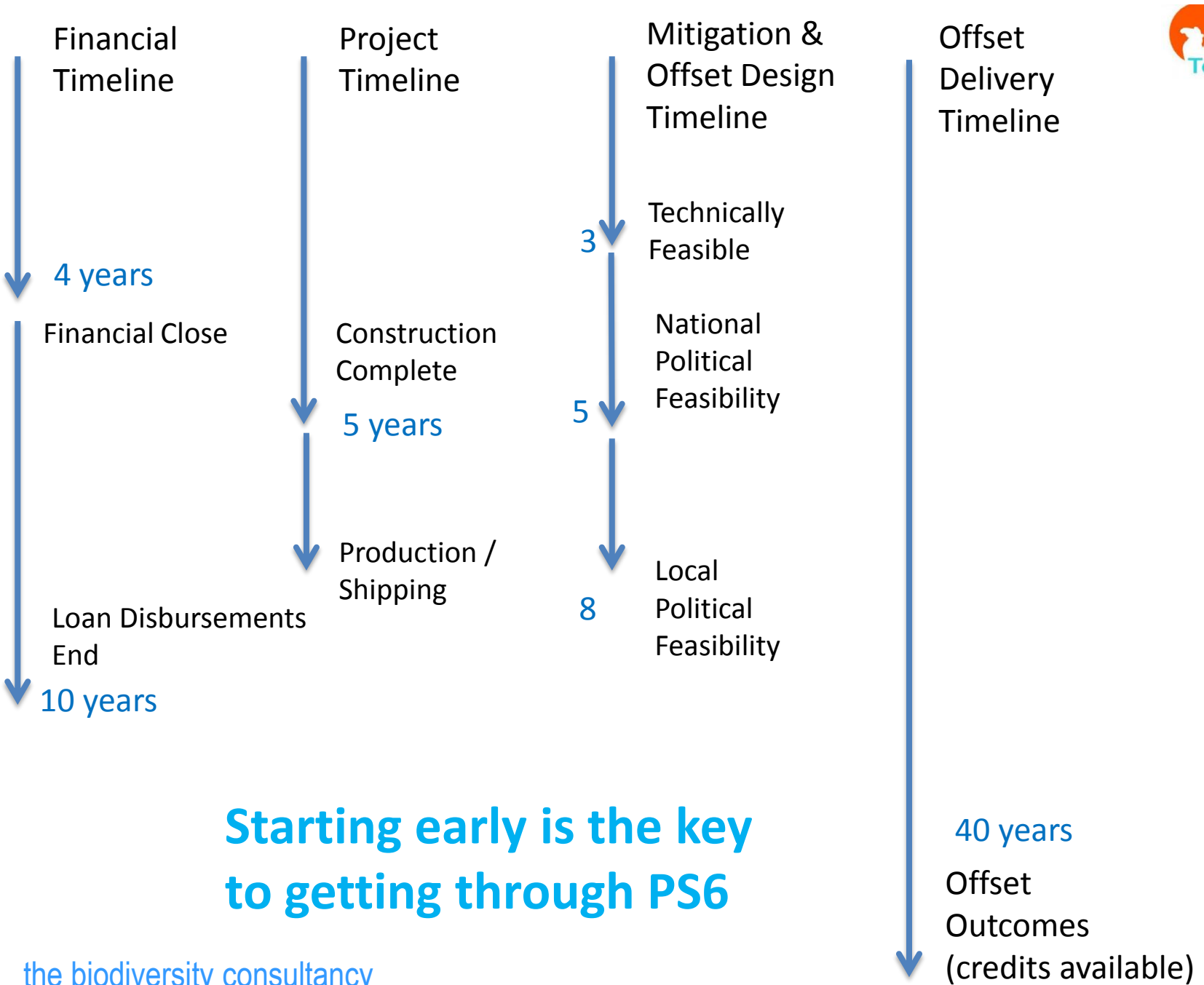
"Net Gain" milestones and goals in the Biodiversity Action Plan are linked to loan disbursements

SEIA practice lags far behind, and therefore slows down financing

- Lack of specialist expertise caused large project delays

Conflict between financing, construction and offset design / outcome timelines

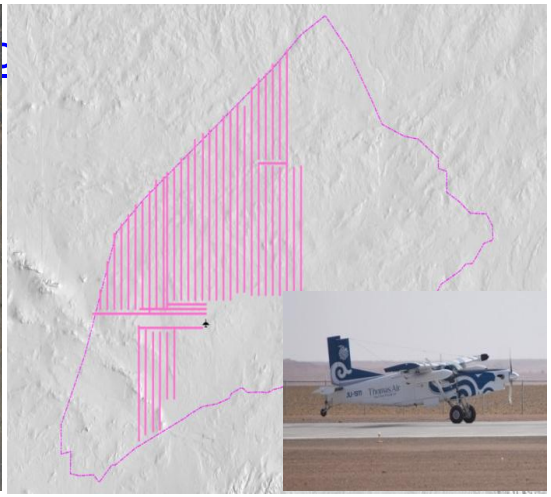
- Baselines require 24 months.
- Technical Offset Design takes 3-6 months.
- Political offset design takes 12-24 months.

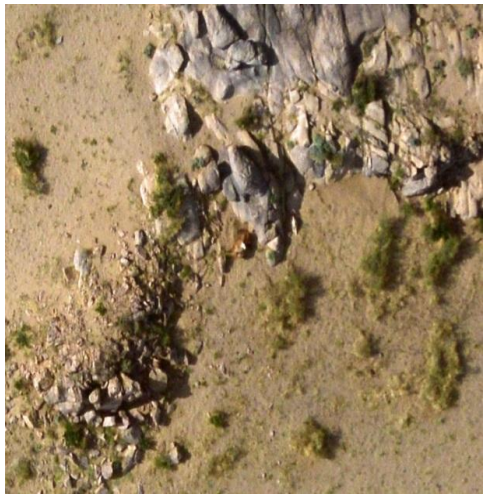


Starting early is the key to getting through PS6

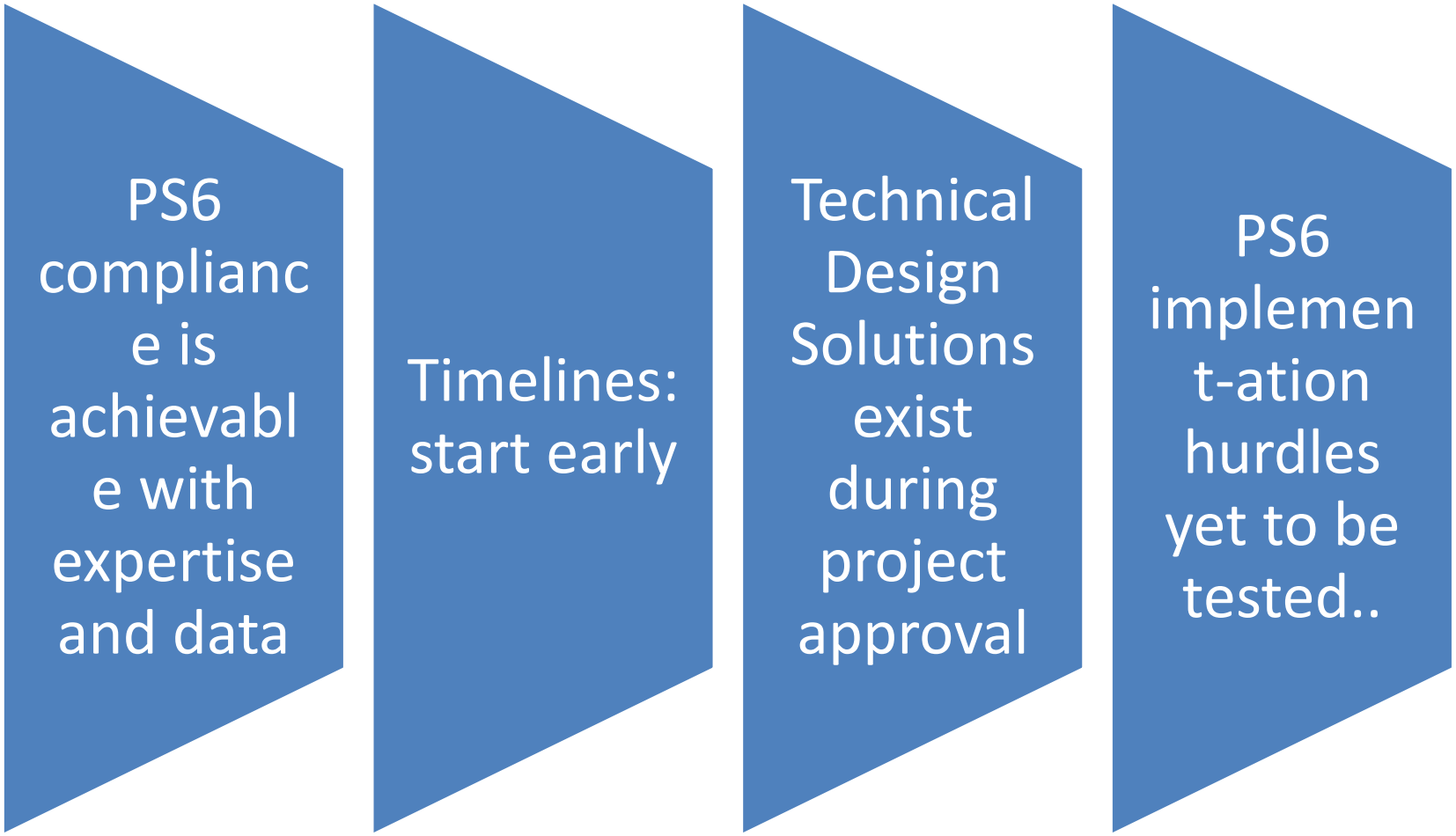
Progress in Year 1 (since financial close)

- Biodiversity Action Planning completed through 5 year partnership with TBC / GBC
- Monitoring and Evaluation underway with Wildlife Conservation Society (WCS)
- Biodiversity Offset Design / Implementation to start 2014 (implementer undecided)





PS6 outlook..


PS6 compliance is achievable with expertise and data
Timelines: start early
Technical Design Solutions exist during project approval
PS6 implement-ation hurdles yet to be tested..

Thanks to

- *Oyu Tolgoi*
  - *Dennis Hosack*
  - *Dorjderem*
- *Fauna and Flora International*
  - *Pippa Howard*
  - *Tony Whitten*
- *TBC*
  - *John Pilgrim*
  - *Helen Temple*
  - *Jeremy Bird*
  - *Edward Pollard*
- *IFC*
  - *Lori Conzo*
  - *Conrad Savy*

And many others…

Proteus Partners Meeting 2013

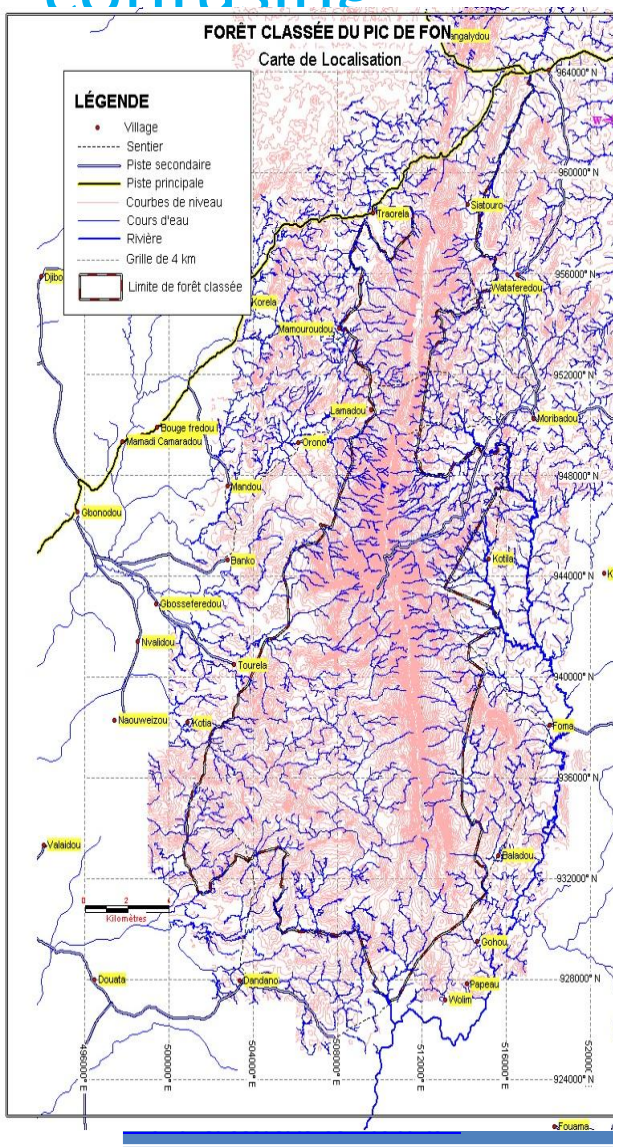
Houston, TX, USA

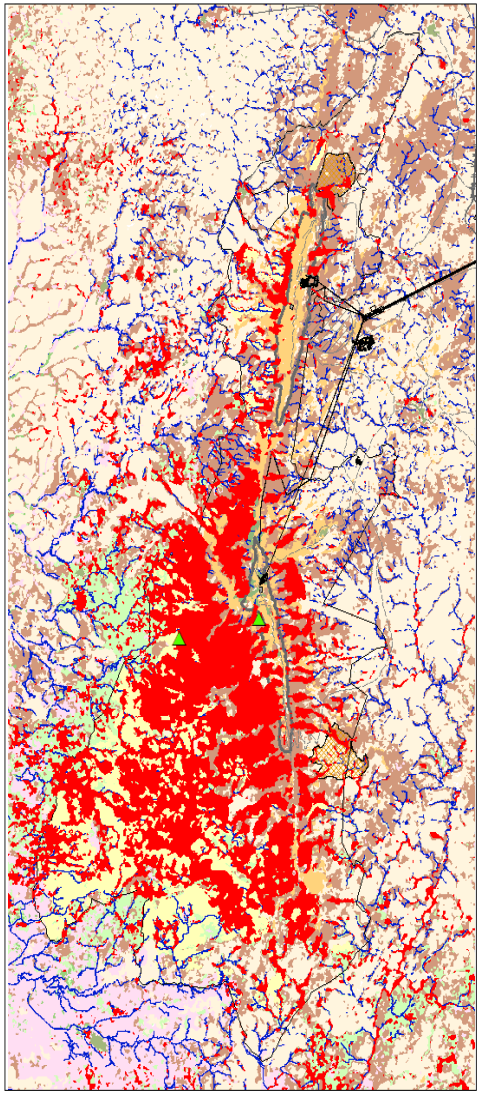

Biodiversity data needs for IFC PS6

Jon Ekstrom (Director, TBC) and Conrad Savy
(Biodiversity Specialist, IFC)

Proteus Meeting Houston June 2013

Biodiversity data sources can be a bit confusing



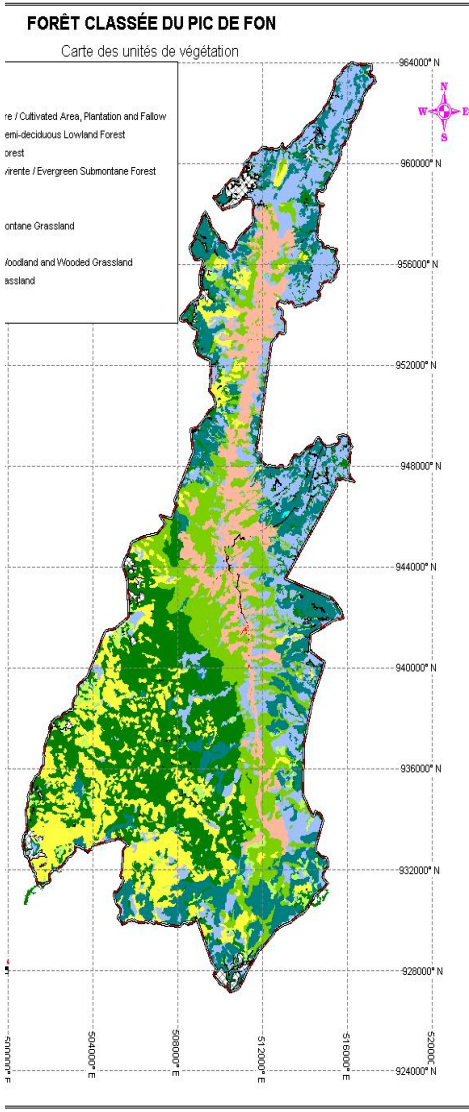


Illadopsis rufescens

20 February TBC
Draft Maps

Consensus Map Vegetation Types

- Bare soil
- Built environment
- Cultivated areas
- Fallow land
- Lowland Forest
- Secondary Forest
- Submontane Forest
- Submontane grassland
- Unclassified
- Wooded Grassland and grassland
- Woodland
- Gallery forest



[Oriole Finch Linurgus olivaceus](#)

			resident	2000	unknown]	A3	Least Concern

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What types of data are available?

Desktop data

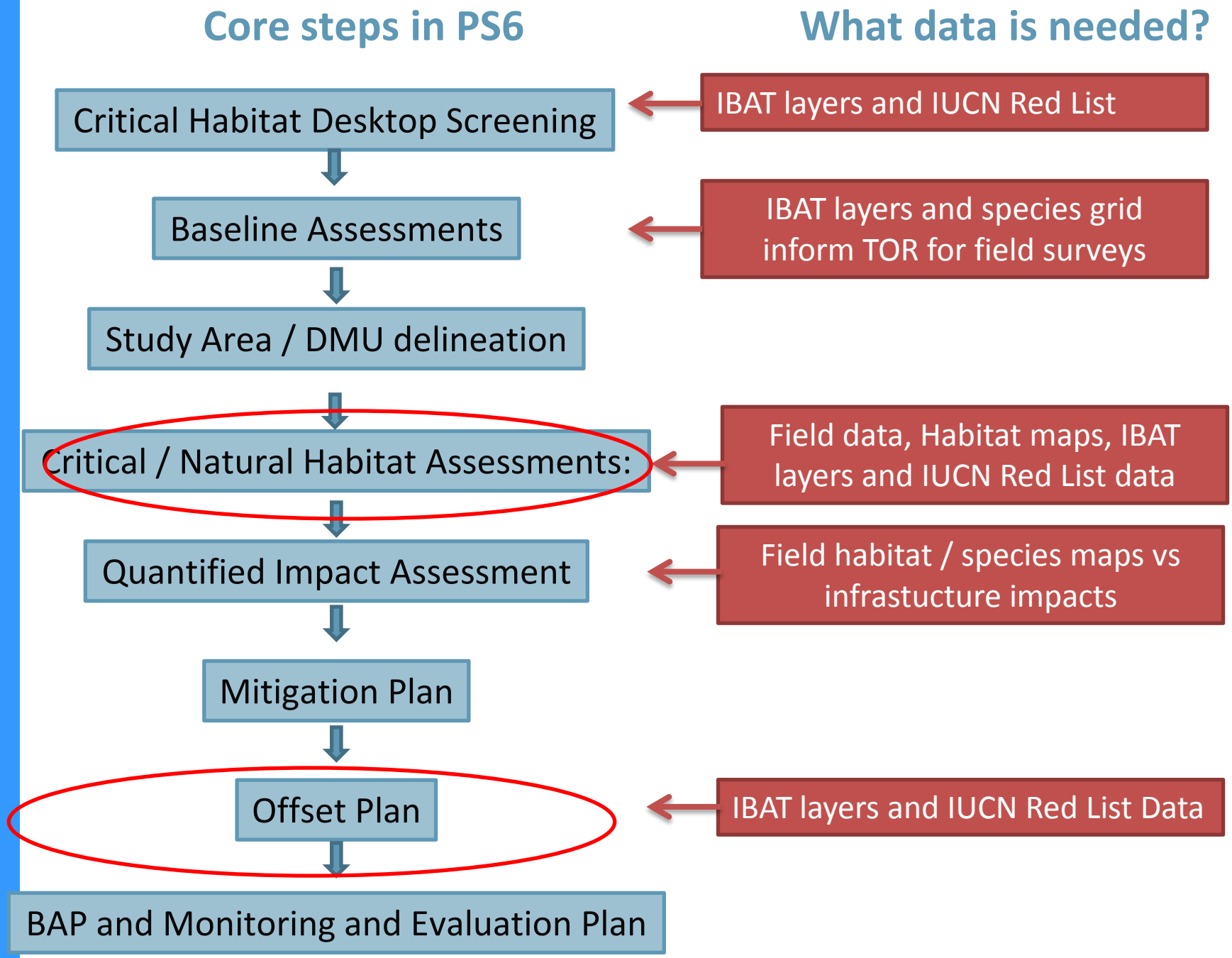
- WDPA
- KBAs
- IUCN Species Polygons
- National databases
- Species-specific action plans
- Ecosystem categories (WWF Ecoregions)

Field data

- Habitat structure
- Habitat composition
- Species inventories
- Species abundance surveys
- Habitat usage studies
- Biophysical studies (soil and water surveys)
- Biodiversity indicators (e.g. freshwater invertebrates)

Desktop and Field Data in the Project Life Cycle

Stage	Useful Data	
Screening for 'showstopper' Biodiversity Risks	e.g. WHS and some Legally Protected Areas	IBAT and desktop data
Screening for major biodiversity risk	Critical Habitat Assessment, IBAT, IUCN Red List Polygons, specialist assessment	IBAT and desktop data
Plan Mitigation	National and local data, specialist knowledge	Field and local data
Manage project impacts	SEIA data; further species specific survey data	Field and local data
Plan Offsets	IBAT = site selection; Field data = offset plan design	IBAT and desktop data
Implement biodiversity offset	Field data collected specifically for offset	Field and local data


Core steps in PS6
What data is needed?
Critical Habitat Desktop Screening
IBAT layers and IUCN Red List
Baseline Assessments
IBAT layers and species grid inform TOR for field surveys
Study Area / DMU delineation
Critical / Natural Habitat Assessments:
Field data, Habitat maps, IBAT layers and IUCN Red List data
Quantified Impact Assessment
Field habitat / species maps vs infrastucture impacts
Mitigation Plan
Offset Plan
IBAT layers and IUCN Red List Data
BAP and Monitoring and Evaluation Plan

Section 2. Data needs for Critical Habitat Assessment using IBAT and IUCN species data

Step 3: Screen biodiversity at the site using Critical Habitat criteria

1. Globally or nationally Critically Endangered or Endangered species;
2. Restricted-range or endemic species;
3. Concentrations of migratory and congregatory species;
4. Highly-threatened and unique ecosystems;
5. Key evolutionary processes.

Critical Habitat is identified irrespective of the type or scale of the development or possible impacts

See: http://www.thebiodiversityconsultancy.com/wp-content/uploads/2012/07/Critical-Habitat-a-concise-summary.pdf
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Criteria	Tier 1	Tier 2
1. Critically Endangered (CR)/ Endangered (EN) Species	(a) Habitat required to sustain ≥ 10 percent of the global population of a CR or EN species/subspecies where there are known, regular occurrences of the species and where that habitat could be considered a discrete management unit for that species. (b) Habitat with known, regular occurrences of CR or EN species where that habitat is one of 10 or fewer discrete management sites globally for that species.	(c) Habitat that supports the regular occurrence of a single individual of a CR species and/or habitat containing regionally-important concentrations of a Red-listed EN species where that habitat could be considered a discrete management unit for that species/subspecies. (d) Habitat of significant importance to CR or EN species that are wide-ranging and/or whose population distribution is not well understood and where the loss of such a habitat could potentially impact the long-term survivability of the species. (e) As appropriate, habitat containing nationally/regionally important concentrations of an EN, CR or equivalent national/regional listing.
2. Endemic/ Restricted Range Species	(a) Habitat known to sustain ≥ 95 percent of the global population of an endemic or restricted-range species where that habitat could be considered a discrete management unit for that species (e.g., a single-site endemic).	(b) Habitat known to sustain ≥ 1 percent but < 95 percent of the global population of an endemic or restricted-range species/subspecies where that habitat could be considered a discrete management unit for that species, where data are available and/or based on expert judgement.
3. Migratory/ Congregatory Species	(a) Habitat known to sustain, on a cyclical or otherwise regular basis, ≥ 95 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle where that habitat could be considered a discrete management unit for that species.	(b) Habitat known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent but < 95 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle and where that habitat could be considered a discrete management unit for that species, where data are available and/or based on expert judgement. (c) For birds, habitat that meets BirdLife International's Criterion A4 for congregations and/or Ramsar Criteria 5 or 6 for Identifying Wetlands of International Importance. (d) For species with large but clumped distributions, a provisional threshold is set at ≥ 5 percent of the global population for both terrestrial and marine species. (e) Source sites that contribute ≥ 1 percent of the global population of recruits.

Six simple rules of thumb to determine Critical Habitat
Tier 1 + Tier 2

Tier 2 Critical Habitat:

1. DMUs with ≥1% of the global population of a restricted-range or migratory/congregatory species = Tier 2
2. DMUs with a single regularly occurring individual of a CR species = Tier 2
3. DMUs with *regionally important concentrations* of a EN species = Tier 2

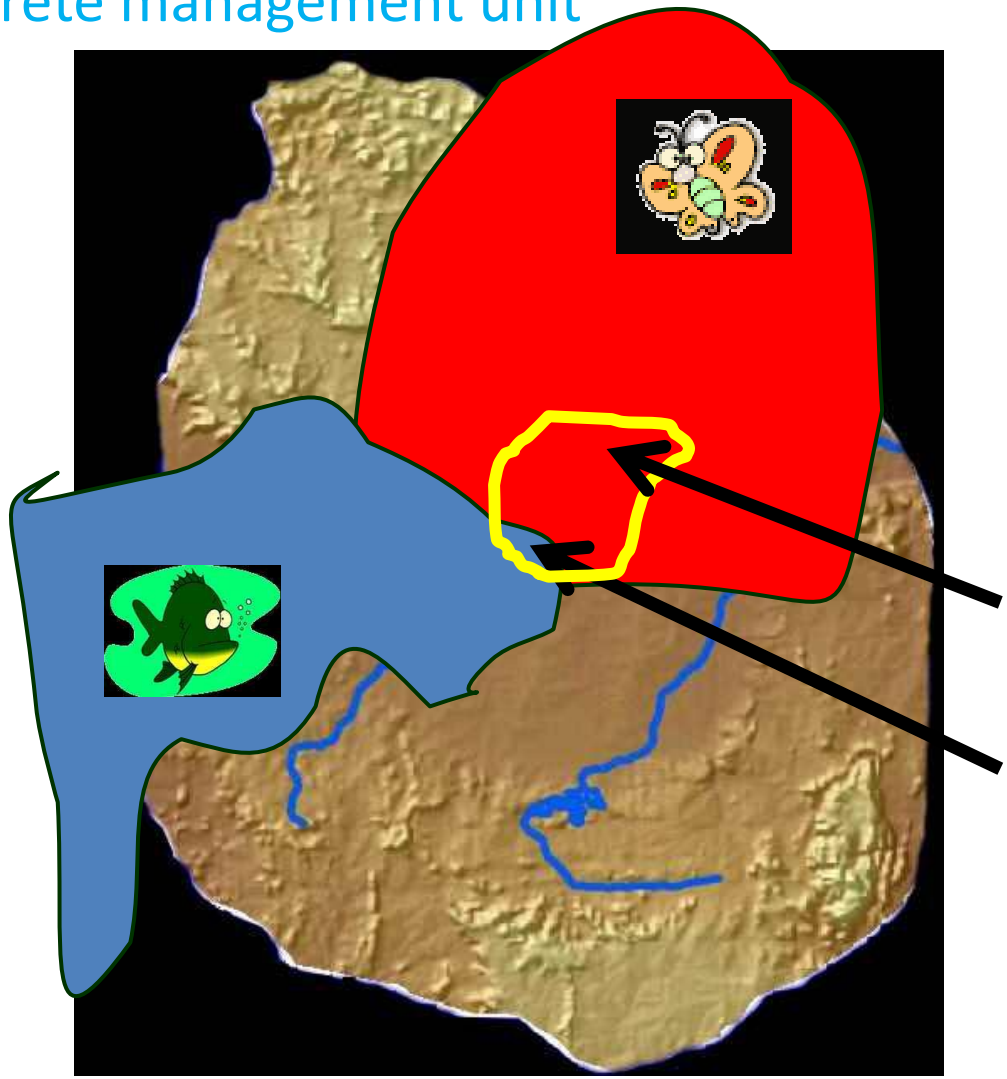
Tier 1 Critical Habitat:

4. DMUs with ≥10% global population of a CR or EN species = Tier 1
5. DMUs which are one of <10 sites globally for a CR or EN species = Tier 1
6. DMUs with ≥95% of the global population of a restricted-range or migratory/congregatory species = Tier 1

(= 'site endemics')

Adapted From: http://www.thebiodiversityconsultancy.com/wp-content/uploads/2012/07/Critical-Habitat-a-concise-summary.pdf

Calculate what proportion (%) of species population exists within the discrete management unit



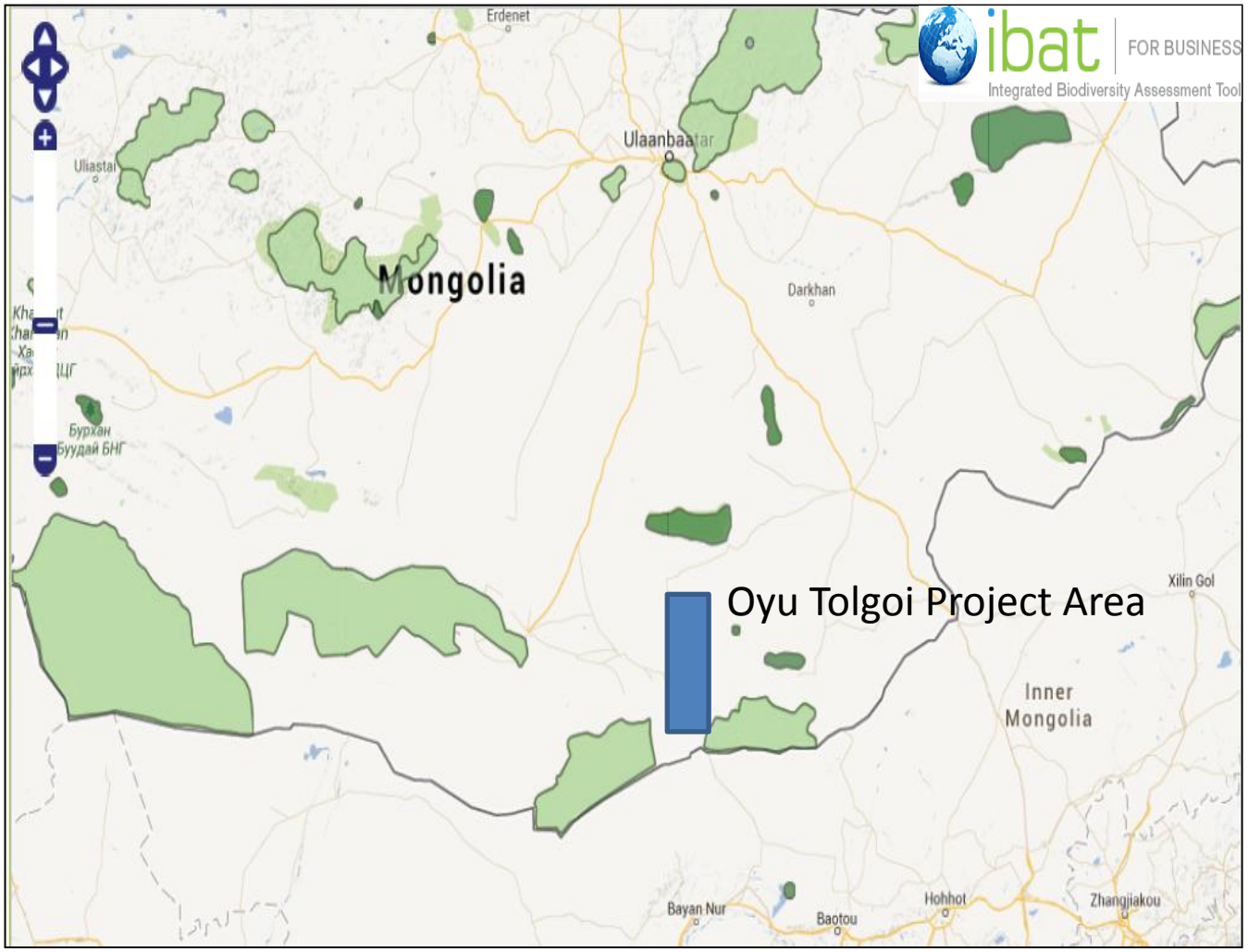
7% of Red species global Range / population (= Critical Habitat for the butterfly)

0.6% of Blue species global range or population (= NOT Critical Habitat for the fish)

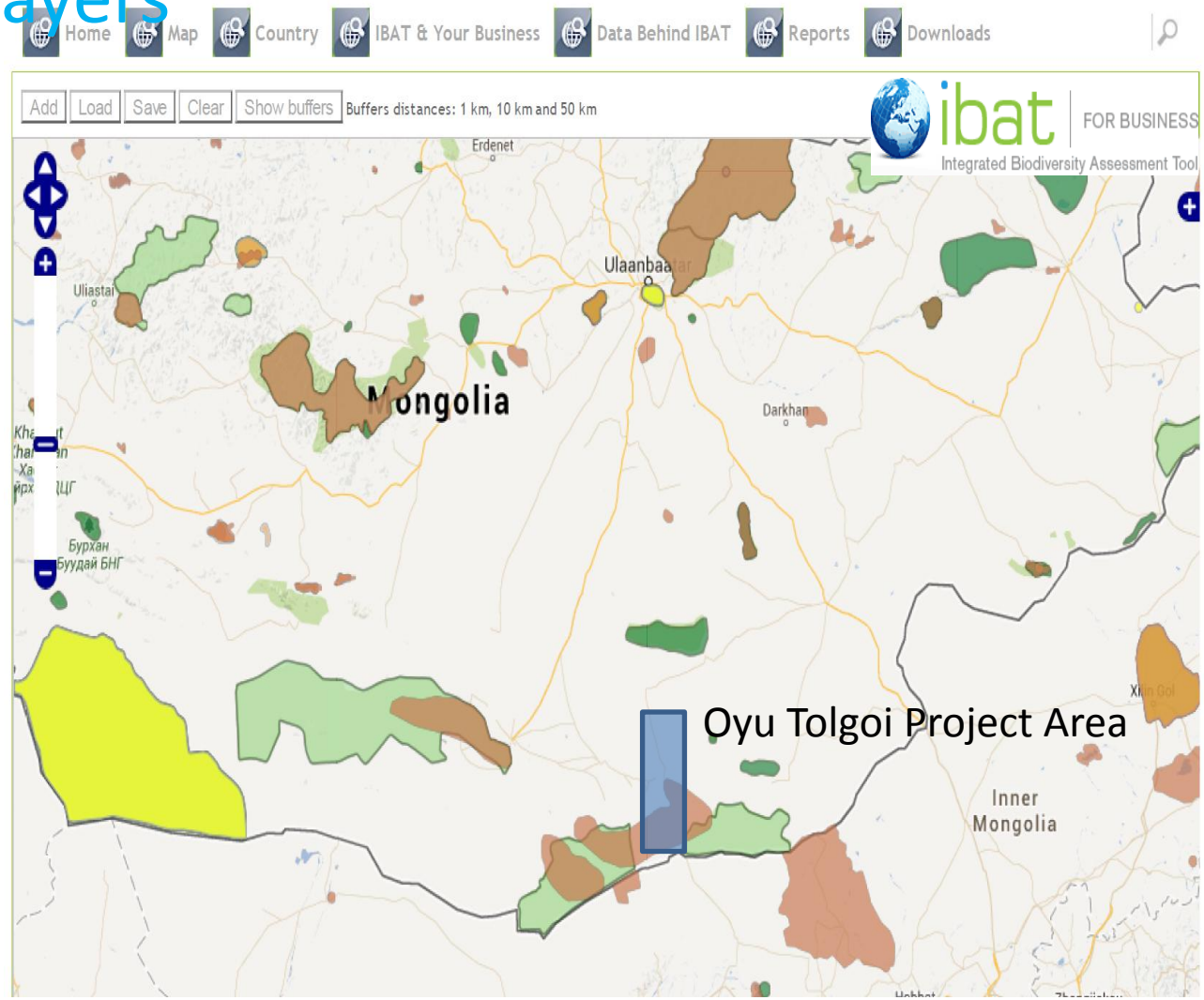
Section 2. Data needs for Oyu Tolgoi Case Study

Data use for Risk Screening + Critical Habitat Assessment

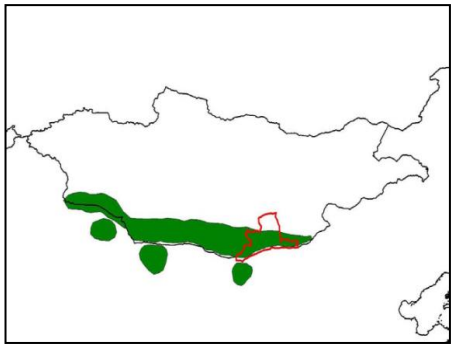
Project screening: Select correct IBAT layers (e.g. IUCN Category I-IV + WHS)



Screening for major biodiversity risk – all IBAT layers



Screening of major biodiversity risk: custom Critical Habitat Assessment using local data and IUCN Red List data



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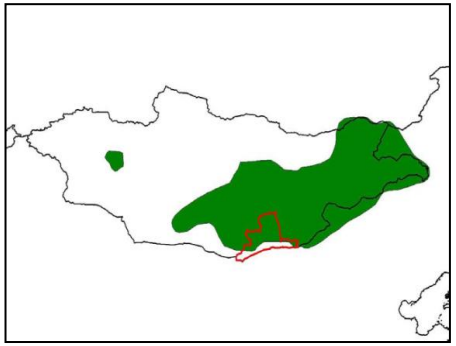

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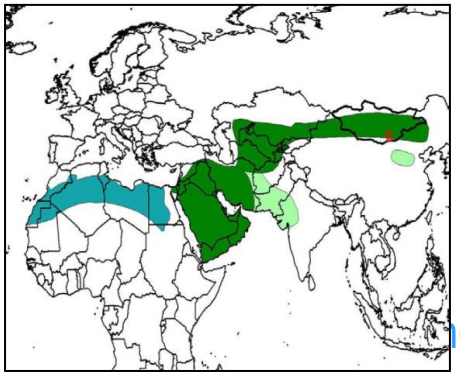

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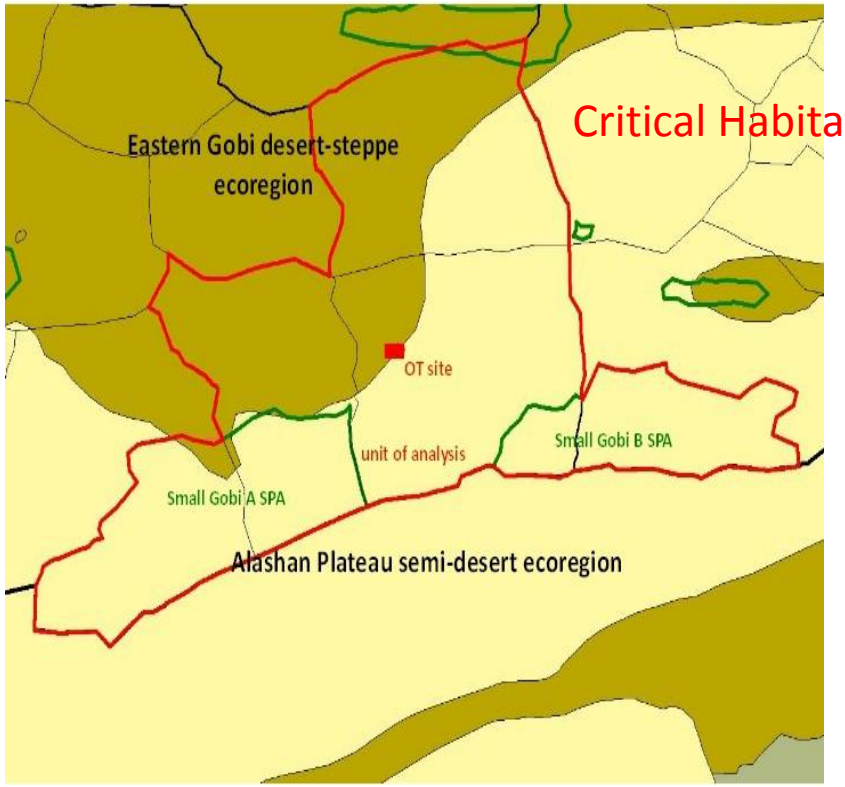


Critical Habitat Project Area

ıcy

Summary:

- IBAT and IUCN species data layers are essential for Critical Habitat screening

- IBAT and IUCN species data layers are essential for Critical Habitat Assessments, in combination with fieldwork

- Limitations (granularity etc) of spatial data layers available desktop (like IBAT) needs to be well understood

  → Risk is you might think you are in Critical Habitat when you are not; and vice versa.

Data use for Mitigation and Offset Design

Equus hemionus (Asiatic Wild Ass)

RED LIST

HOME | SPECIES RANGE | OBSERVATION | PROTECTED AREAS

Oyu Tolgoi

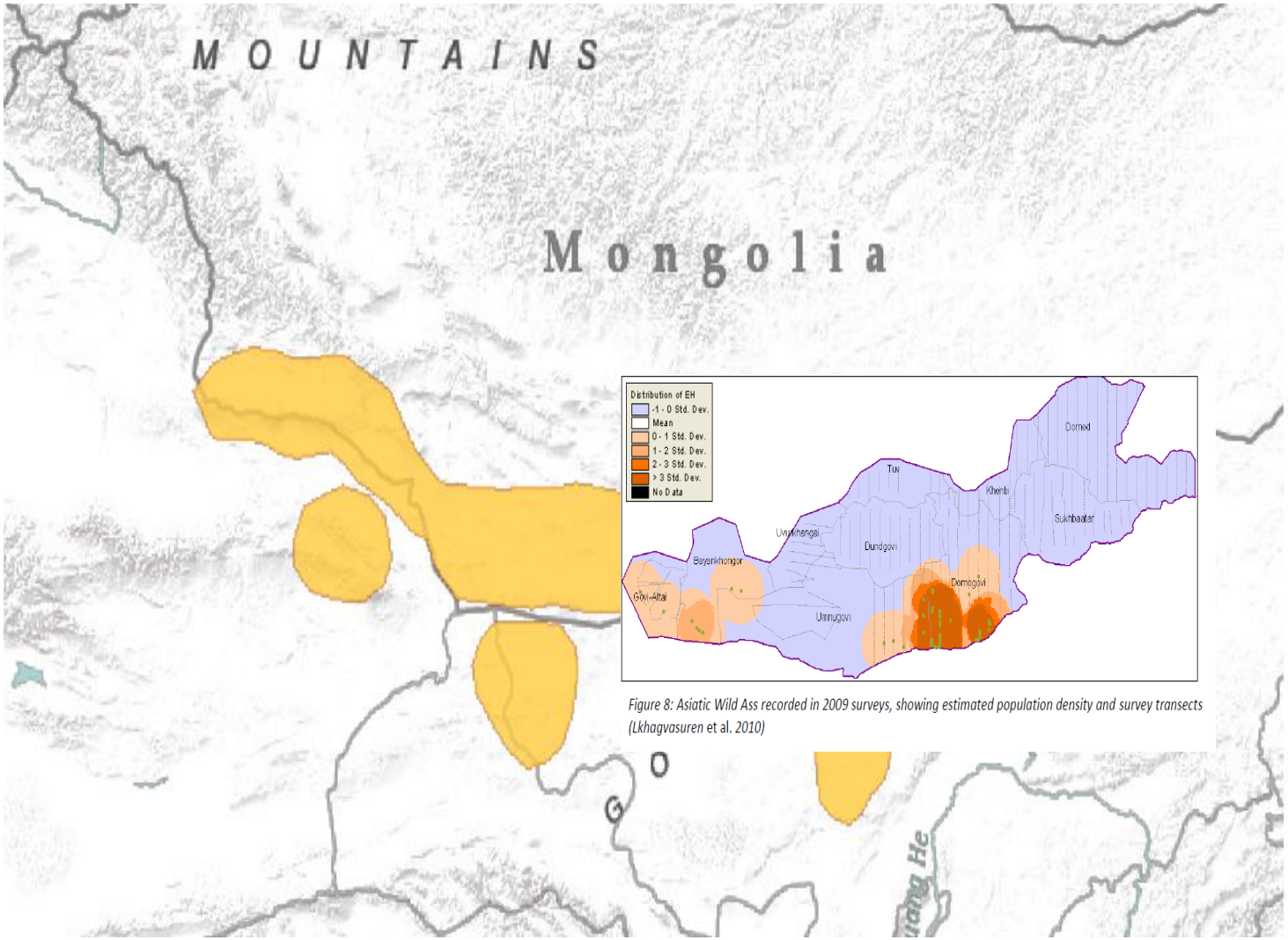


Figure 8: Asiatic Wild Ass recorded in 2009 surveys, showing estimated population density and survey transects (Lkhagvasuren et al. 2010)

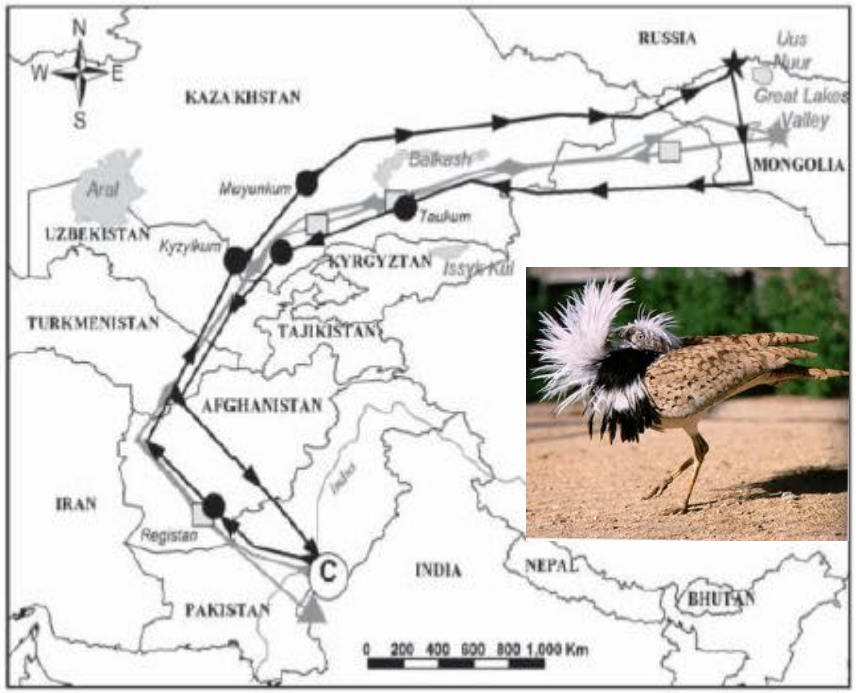


Figure 14: Migration routes of two Houbara Bustards, showing breeding sites (stars), long stop-overs (circles and squares) and wintering sites (©) (Tourenq et al. 2004)

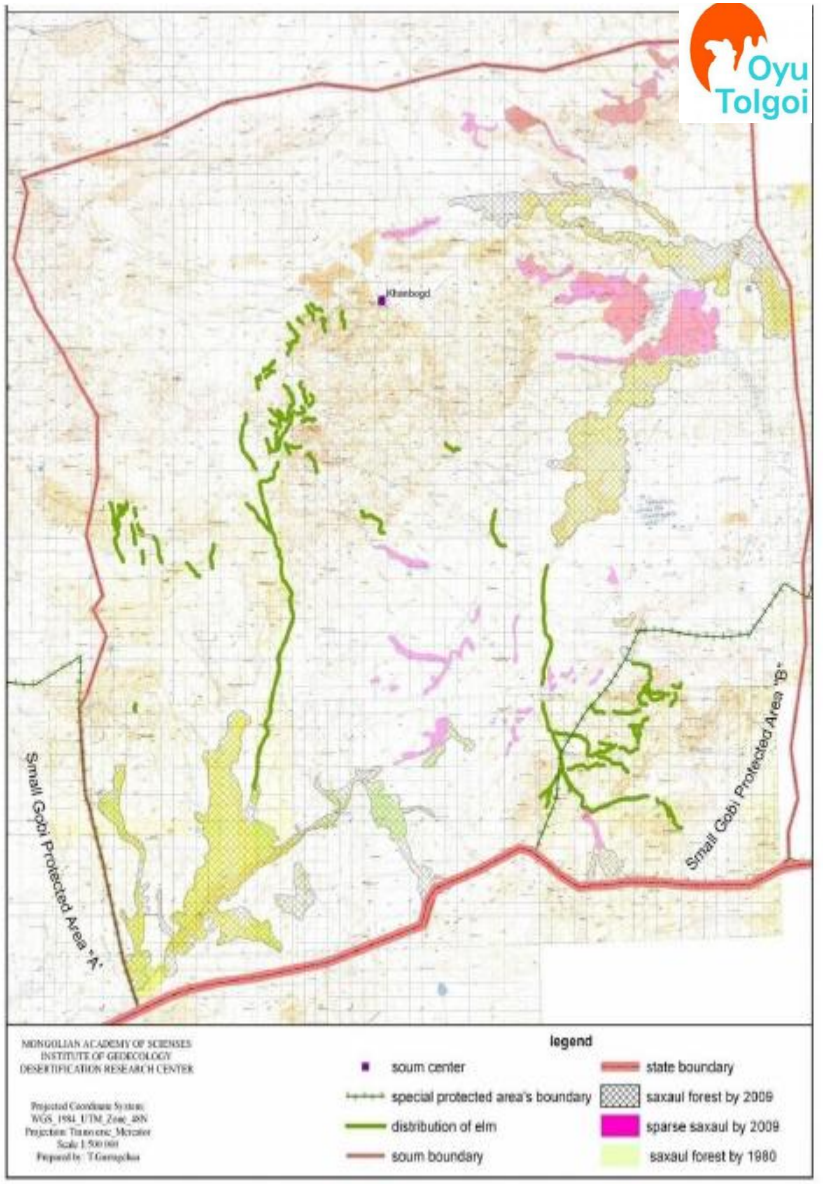


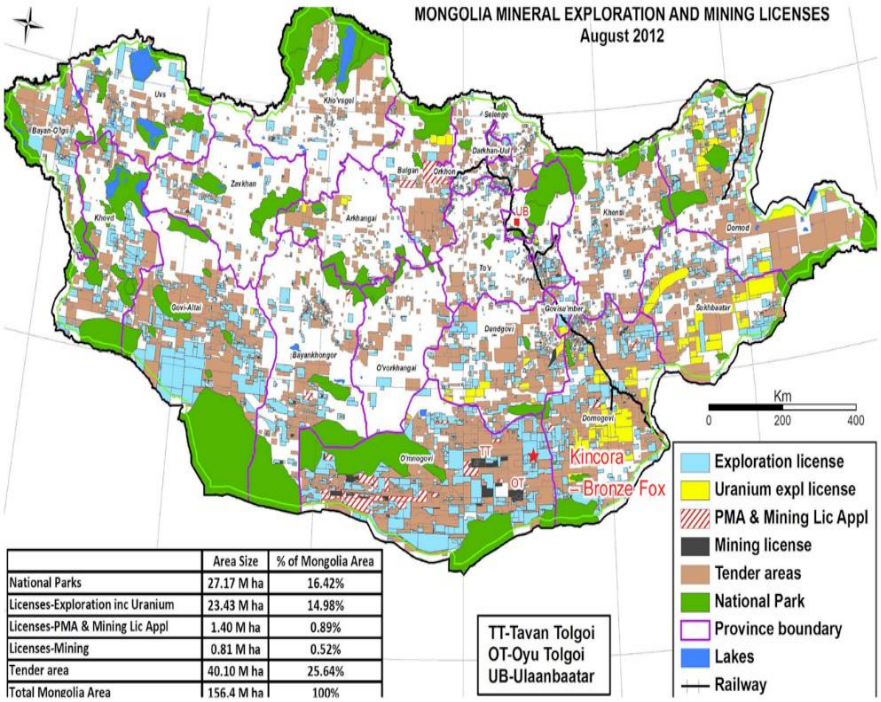
Figure 13: Distribution of elm trees and saxaul forest in 2009 (legend for saxaul forest in 1980 and 2009 may need transposing)

Use local data to design mitigation options

- Distribution of species and habitats
- Movements of species
- etc

Consider planned infrastructure and mineral concessions in offset site selection

Railways and Roads



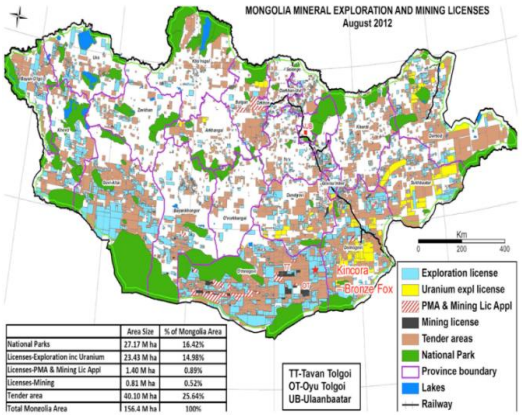
	Area Size	% of Mongolia Area
National Parks	27.17 M ha	16.42%
Licenses-Exploration inc Uranium	23.43 M ha	14.98%
Licenses-PMA & Mining Lic Appl	1.40 M ha	0.89%
Licenses-Mining	0.81 M ha	0.52%
Tender area	40.10 M ha	25.64%
Total Mongolia Area	156.4 M ha	100%

Mineral concesssions

Combining political and biological constraints in no net loss design: choices are limited..

Infrastructure constraints

Mining concession constraints



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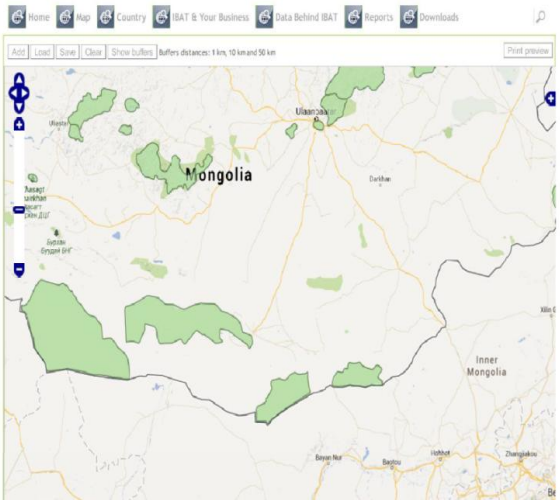
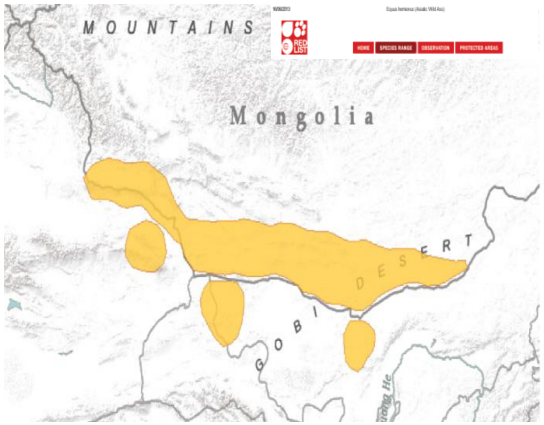


Distribution of current Protected areas



Red List predictive distribution of key species

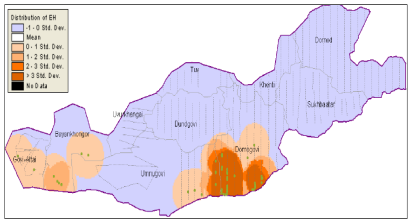


Figure 8: Asiatic Wild Ass recorded in 2009 surveys, showing estimated population density and survey transects (Lkhagvasuren et al. 2010)

Field data on key species

Expert consultation as a key data source

- IUCN species specialist groups SSC
- Academic institutions
- Local NGOs
- Species specialists

- OT project depended mostly on expert advice and knowledge because project field data were so poor

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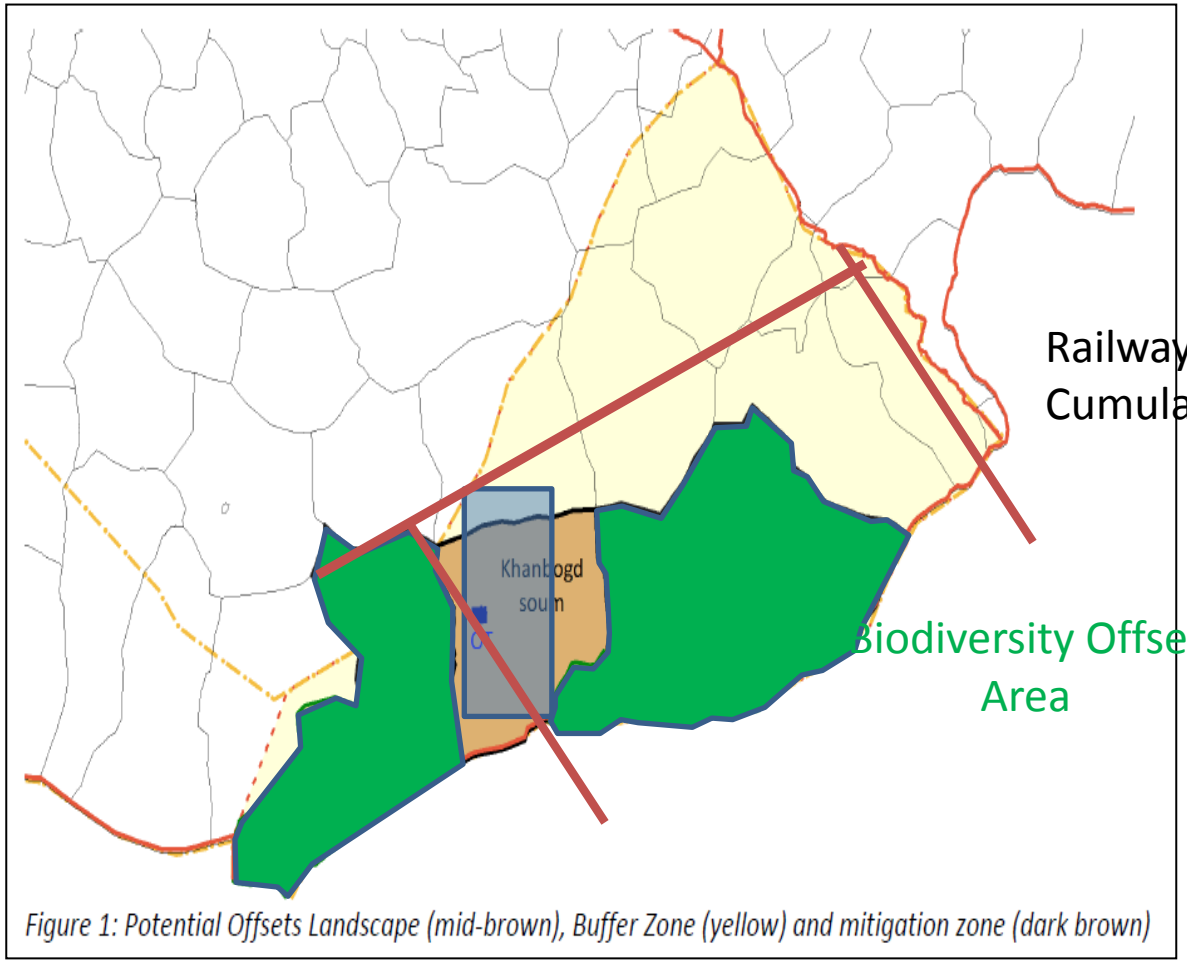

Figure 1: Potential Offsets Landscape (mid-brown), Buffer Zone (yellow) and mitigation zone (dark brown)

Take Home Messages

Different types of data needed for screening, scoping, design

Different types of data for Critical Habitat Assessment and Mitigation / Offset Design for No Net Loss

IBAT data is very useful in

- Critical Habitat screening (IFC PS6 Paragraph 16)
- Design of PS6 fieldwork
- Offset Site Selection (IFC PS6 Paragraphs 10, 17, 18, 19)

Thankyou