

The application of IUCN Red List Data for industry risk management

“IUCN Knowledge Products”

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What is provided in Red List data?

1. Species threat status (VU EN CR etc)
2. Species threat / ecological / altitudinal information
3. GIS maps of species ranges / broad distribution
4. (Sometimes) GIS maps of species habitat occupancy

Common industry risk management issues

1. Biodiversity risk screening (pre-ESIA)
2. Design of baseline studies / surveys
3. Critical Habitat Assessment
4. Residual impact / No Net Loss feasibility (even pre-ESIA!)
5. Screening potential biodiversity offset sites

1. Pre-ESIA Biodiversity Risk Screening

What is it?

The purpose of these screenings is to answer the following questions:

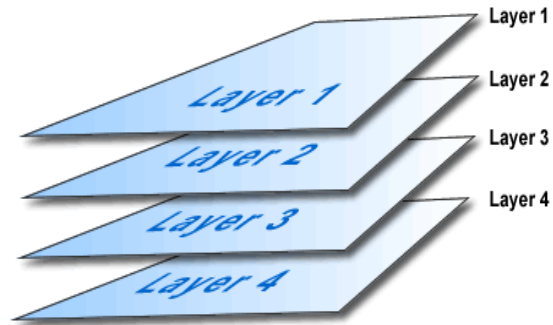
1. What priority biodiversity is in the permit area / at the site?
2. What are the biodiversity risks of development at this site? What are the regional opportunities?
3. Is there likely to be Critical Habitat?

How is biodiversity risk screening completed?

Combine Biodiversity Layers

with

Industrial plans



e.g.

- IUCN Red List, National lists
- KBAs, Maps of natural habitat
- Ecosystem services

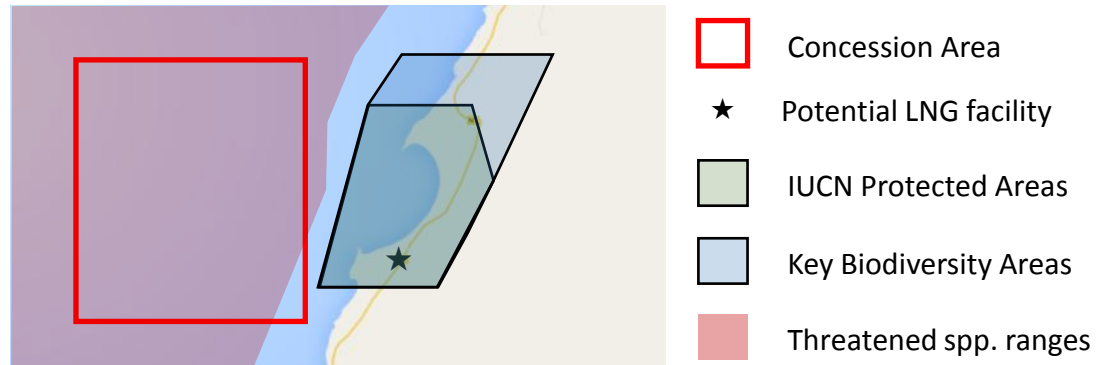
How is biodiversity risk screening completed?

What is it for?

- Identify potential issues to avoid project delays
- Identify intrinsic, compliance and reputational risks - inform decision making
- Early response e.g. initiate baselines to align with project timeframe

Methods

- GIS overlay tool
- Combination of data layers



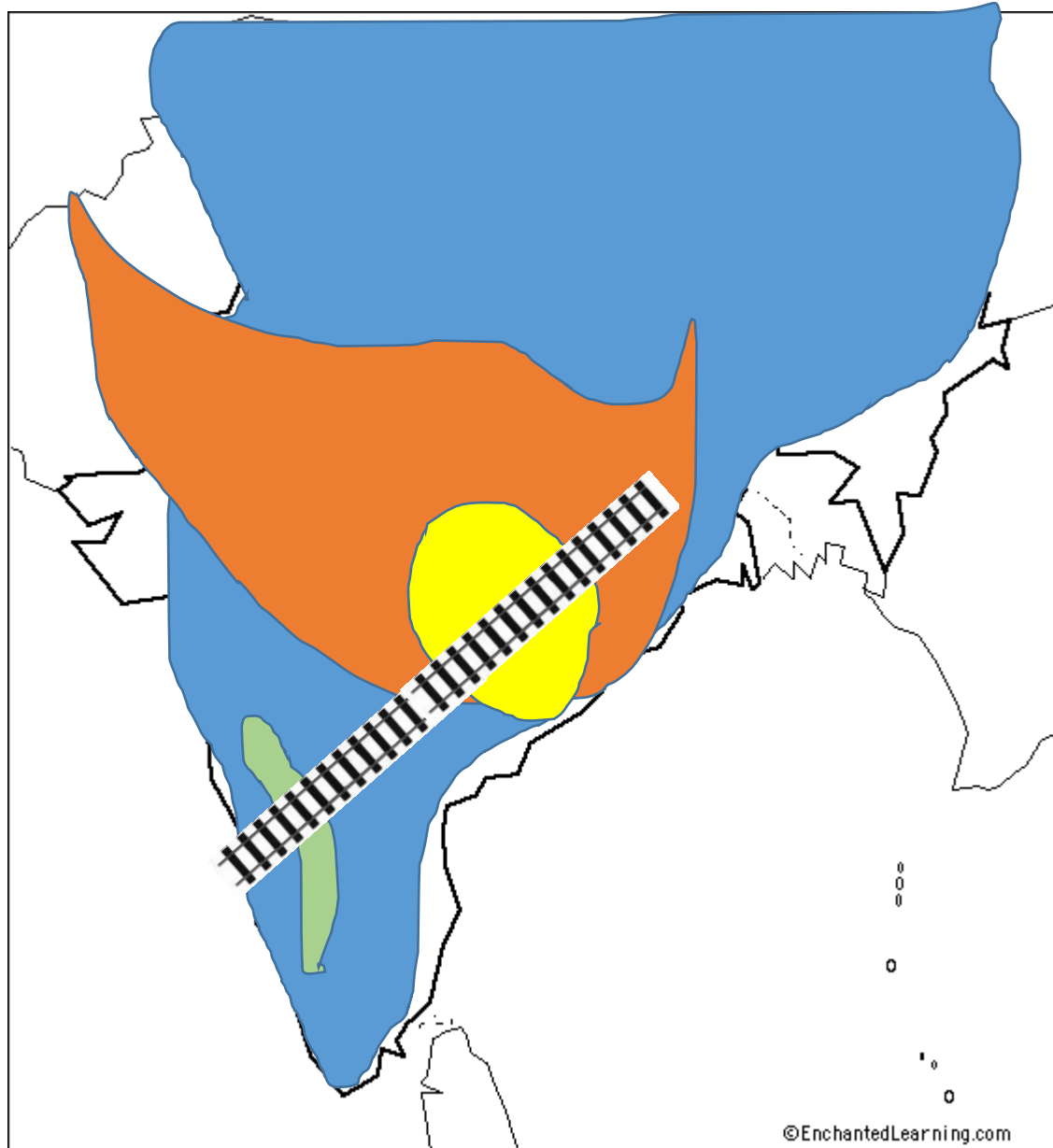
What is the scope for risk screening?

- Worldwide – marine and terrestrial
- All sectors
- 2-8 days
- For investment decisions, pre-ESIA, baseline design, SEIA design and scoping

IUCN Red List maps inform design of baseline survey effort

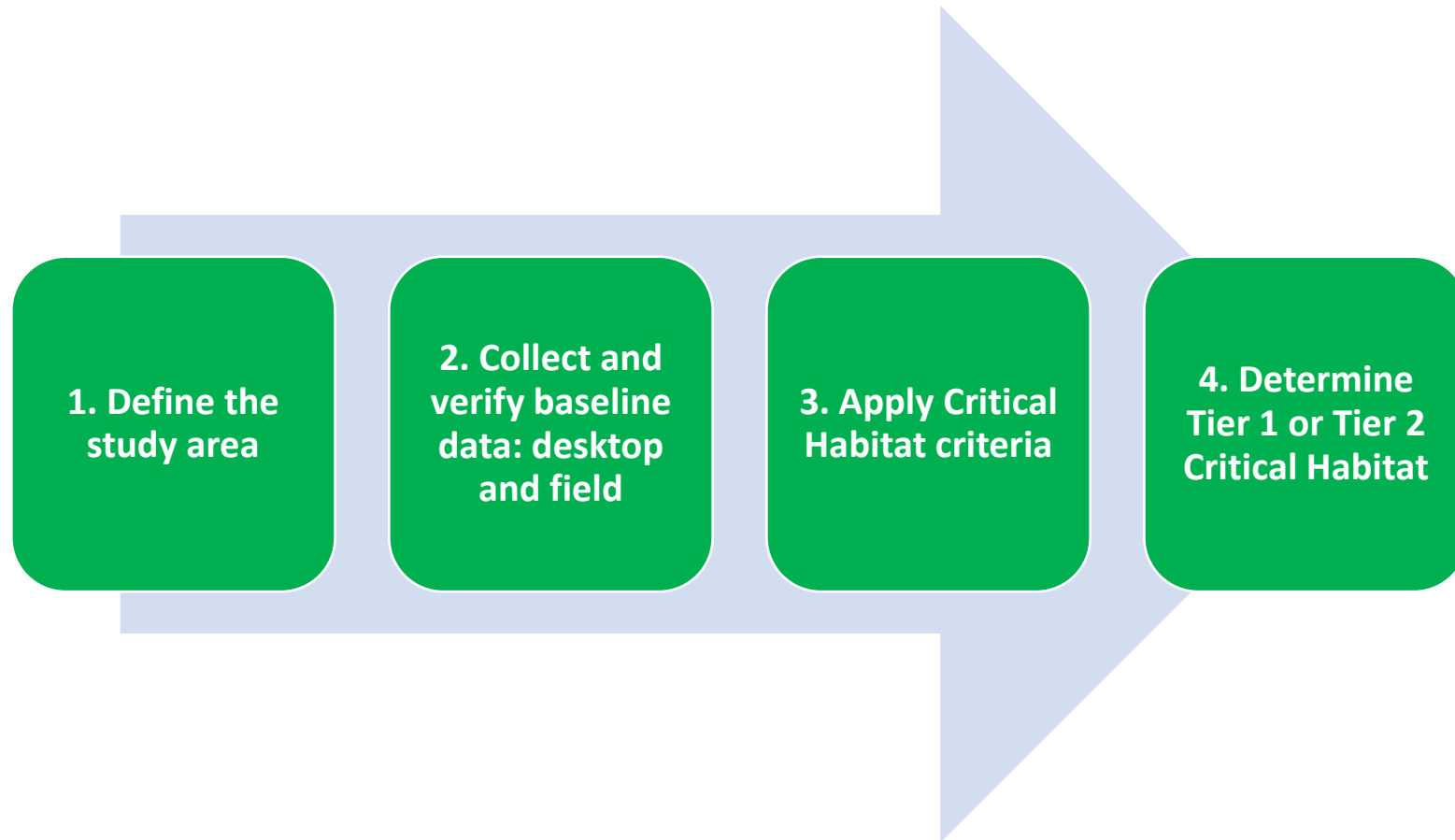
EOO Extent of Occurrence

AOO Area of Occupancy



Baseline survey design

2. Critical Habitat Screening / Assessment



IUCN Red List data is useful for criteria 1-3 (and soon no. 4)

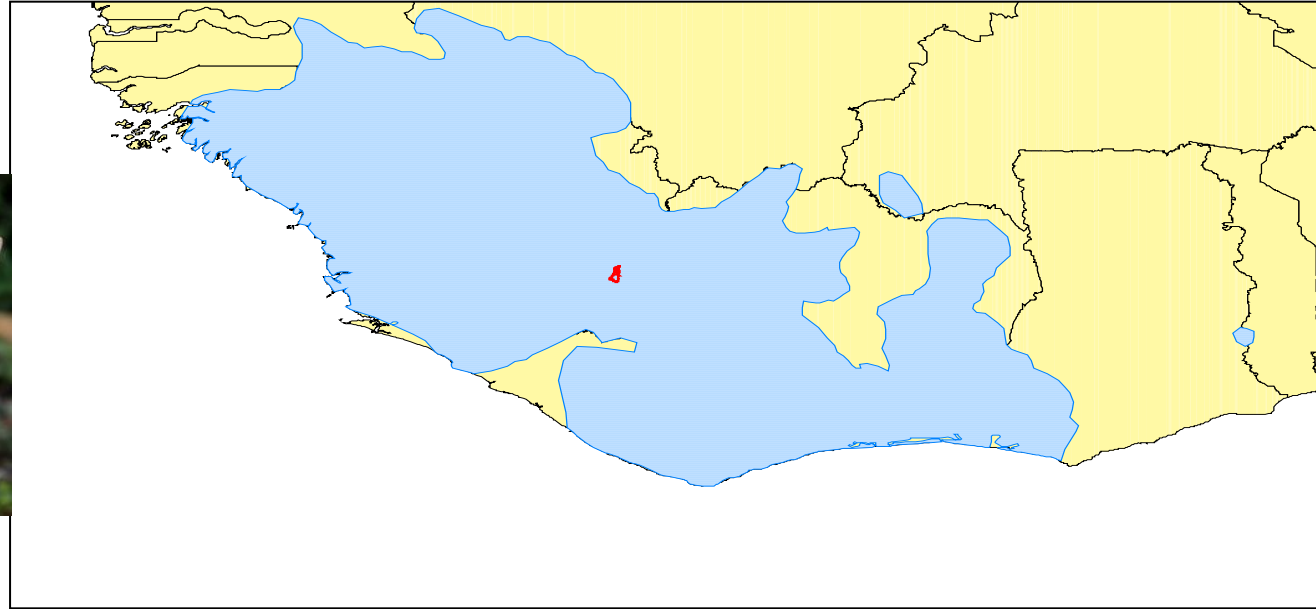
- ✓ 1. Globally or nationally Critically Endangered or Endangered species;
- ✓ 2. Restricted-range or endemic species;
- ✓ 3. Concentrations of migratory and congregatory species;
- (✓) 4. Highly-threatened and unique ecosystems;
- 5. Key evolutionary processes.

Industry guide to Critical Habitat: <http://www.thebiodiversityconsultancy.com/wp-content/uploads/2013/07/Critical-Habitat2.pdf>

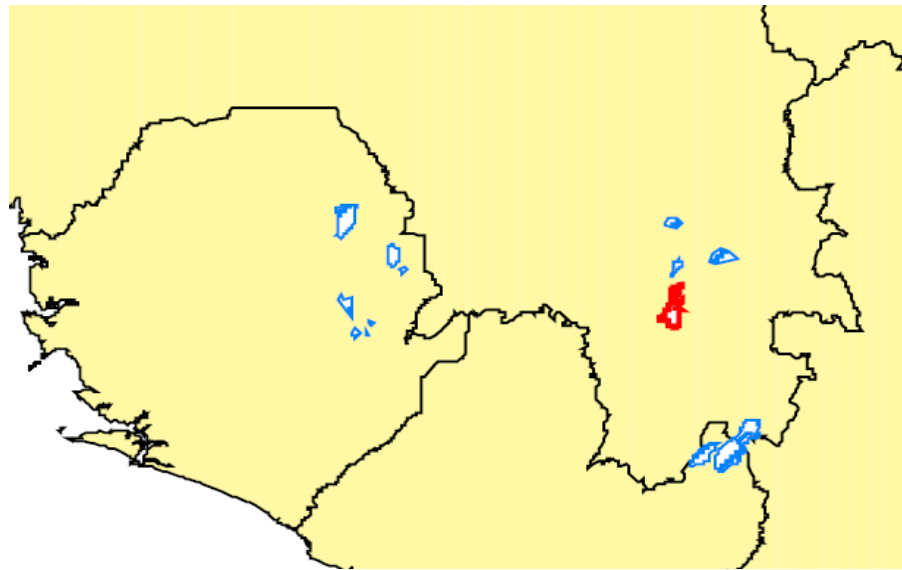
Criteria	Tier 1	Tier 2
1. Critically Endangered / Endangered	a) $\geq 10\%$ of global population of IUCN Red-listed CR or EN species / subspecies, where habitat is discrete management unit	c) single individual of CR species / subspecies and/or habitat containing regionally-important concentrations of EN species / subspecies (discrete management unit)
	b) one of ≤ 10 discrete management sites globally for IUCN-listed CR or EN species / subspecies.	d) significant importance to CR or EN species / subspecies (broader landscape unit)
		e) $\geq 10\%$ of national/regional population of nationally-/regionally listed CR or EN species / subspecies (i.e., habitat is one of 10 or fewer in-country or regional locations) (discrete management unit).
2. Endemic / Restricted Range	a) $\geq 95\%$ of global population of endemic or restricted-range species / subspecies (discrete management unit).	b) $\geq 1\%$ but $< 95\%$ of global population of an endemic or restricted-range species / subspecies (discrete management unit) c) One of 2 to 100 discrete management sites globally (discrete management unit)
3. Migratory / Congregatory	a) $\geq 95\%$ of global population of migratory or congregatory species / subspecies at any (discrete management unit).	a) $\geq 1\%$ but $< 95\%$ of global population of migratory or congregatory species / subspecies (discrete management unit) b) One of 2 to 100 discrete management sites globally (discrete management unit) c) For birds, habitat that meets Birdlife International's Criterion A4 for congregations d) For species with large but clumped distributions, a provisional threshold is set at $\geq 5\%$ percent of the global population for both terrestrial and marine species. e) Source sites that contribute $\geq 1\%$ percent of the global population of recruits.

Proportion of global population size or distribution from IUCN maps (EOO and AOO)

>10% of global population size or known distribution (a surrogate of population)?



Number of total known sites for the species in the world



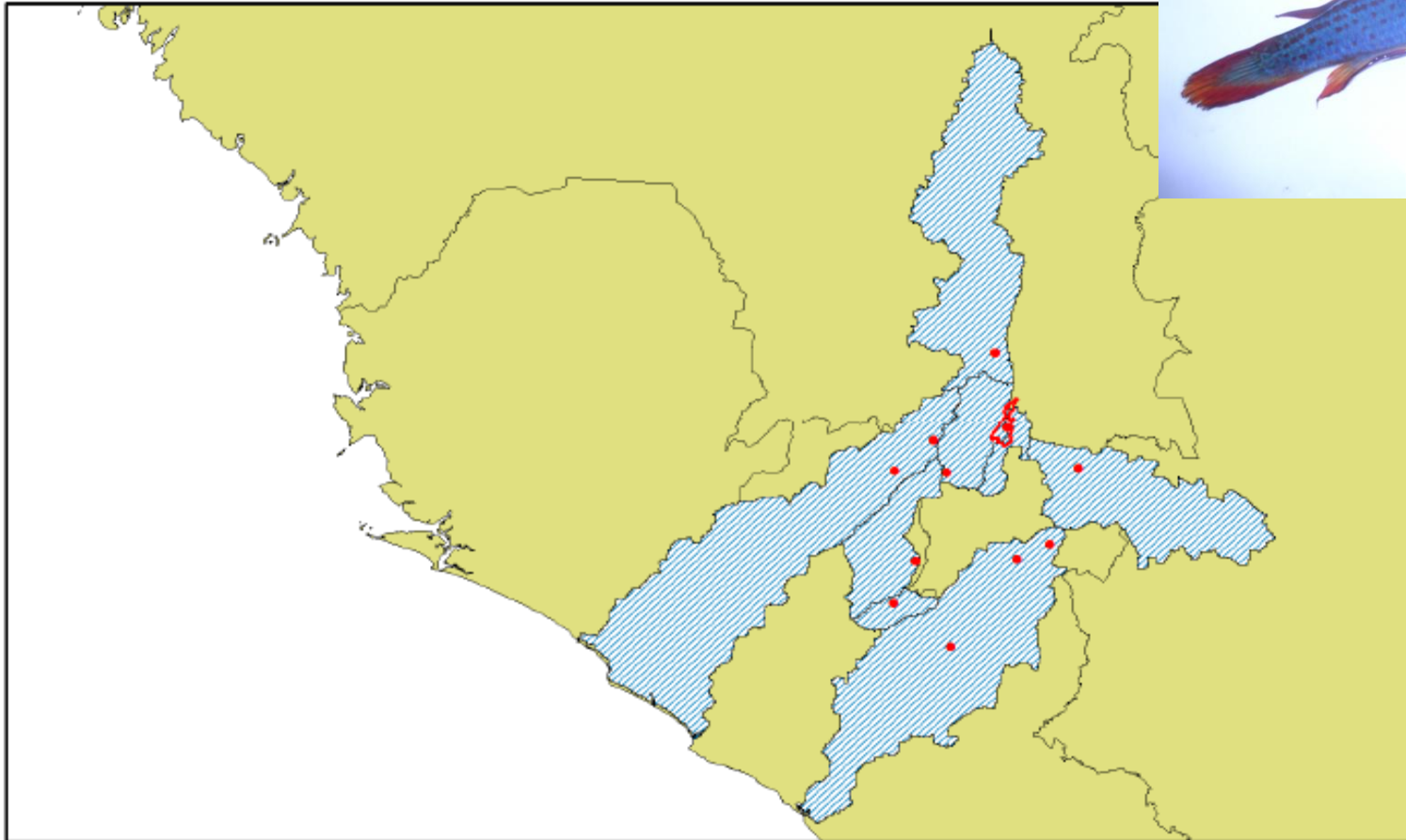
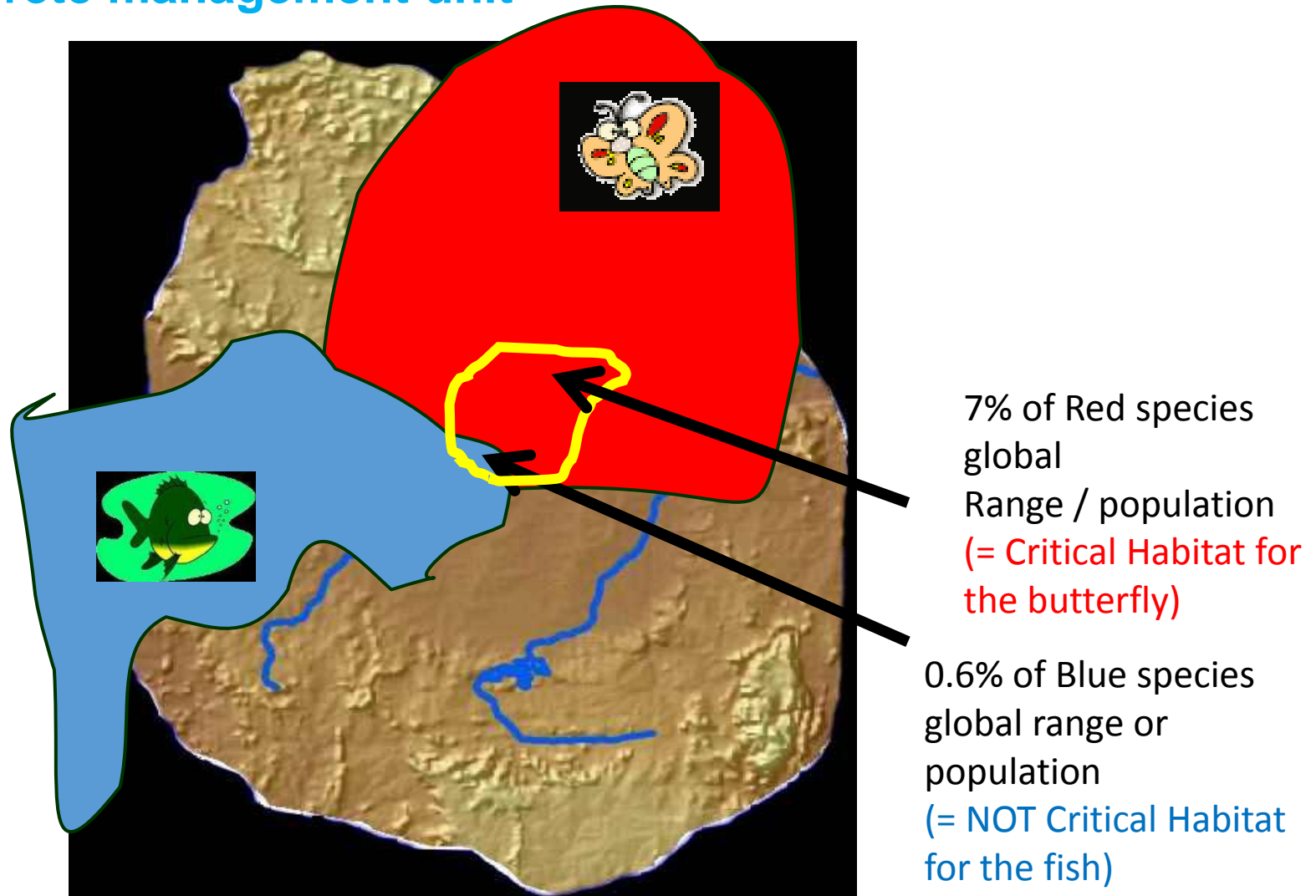


Figure 28. Distribution of *Epiplatys lamottei*. Red circles show known collection sites for the taxon. Blue hatched areas are drainage basins from which the taxon has been recorded and represents its currently estimated global distribution according to IUCN methods (drainage basins defined using the Hydro1K Basins baselayer; U.S. Geological Survey⁵³). The red outline is the border of the Pic de Fon CF.

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



Critical Habitat Assessment - summary

Critical Habitat Assessment

- **Red List is one data layer** amongst many to use (IBAT, IUCN Red List polygons, habitat maps, other available local data)
- **Quantitative threshold data** can be derived from IUCN Red List data, care is required

c. 50 screenings conducted to date

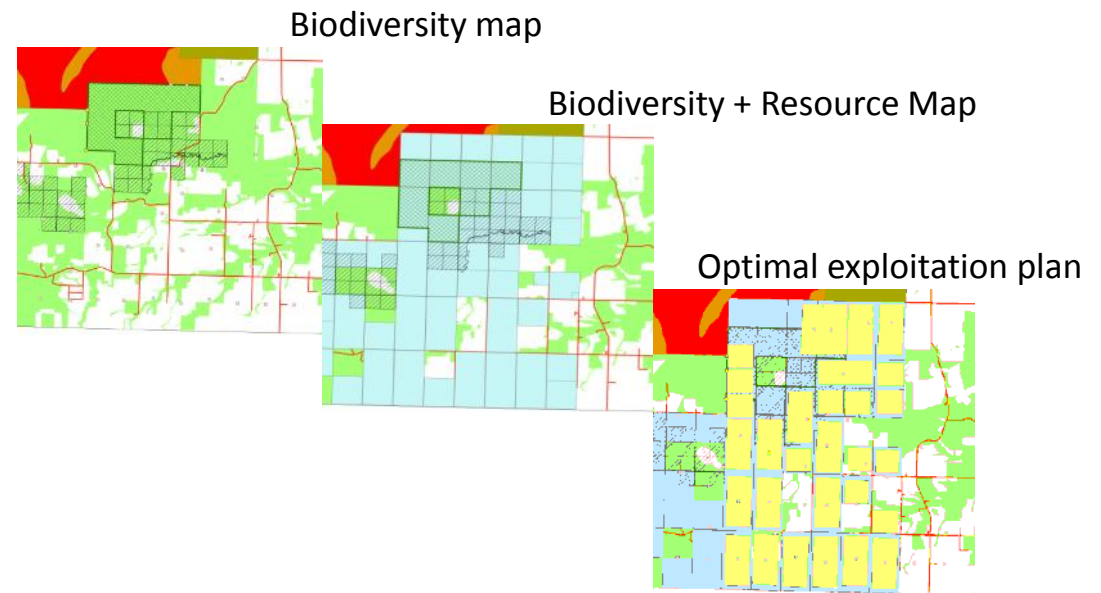
Few examples exist in public domain:

- Oyu Tolgoi http://ot.mn/sites/default/files/documents/ESIA_BA2_Critical_Habitat_Assessment.pdf (TBC and FFI)
- Rio Tinto Guinea Simandou http://www.riotintosimandou.com/documents/Railway/R_Ch11_Biodiv_EN.pdf (TBC and ERM)
- Shell – confidential sites (TBC)
- BG – Confidential sites (TBC)
- Glencore Xstrata Congo: TBC and WCS
- Eramet Gabon, New Caledonia (TBC and Environ)

Combine IUCN data with other data layers to create...

Outputs

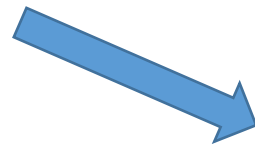
- Constraints maps for engineers
- Critical Habitat maps
- Resource exploitation maps
- Spatial mitigation plans
- Residual impact data
- No Net Loss Feasibility Assessments
- PS6 Feasibility Assessments



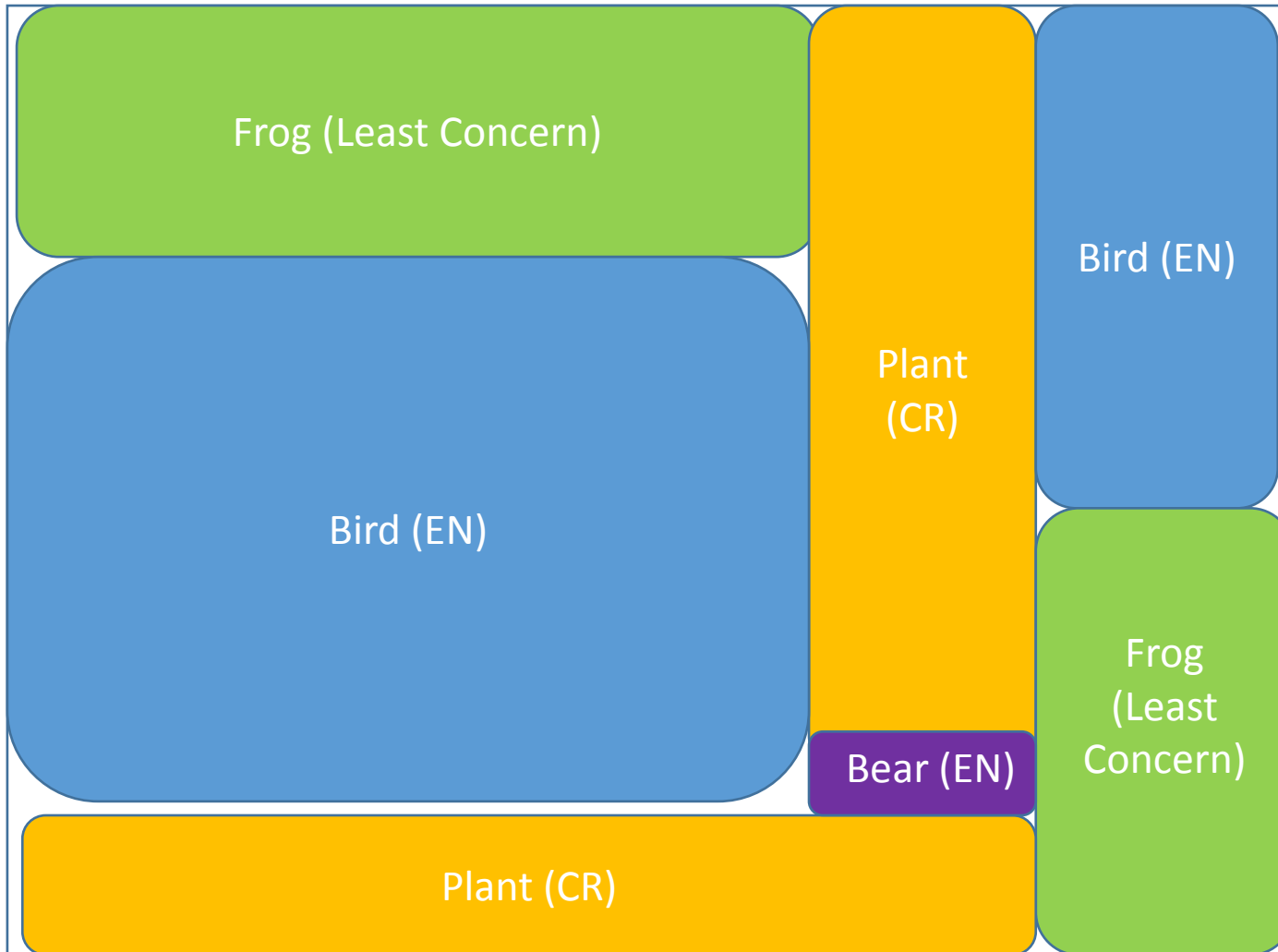
3. No Net Loss / Residual Impact Assessments

“Could this project comply with IFC PS6?”

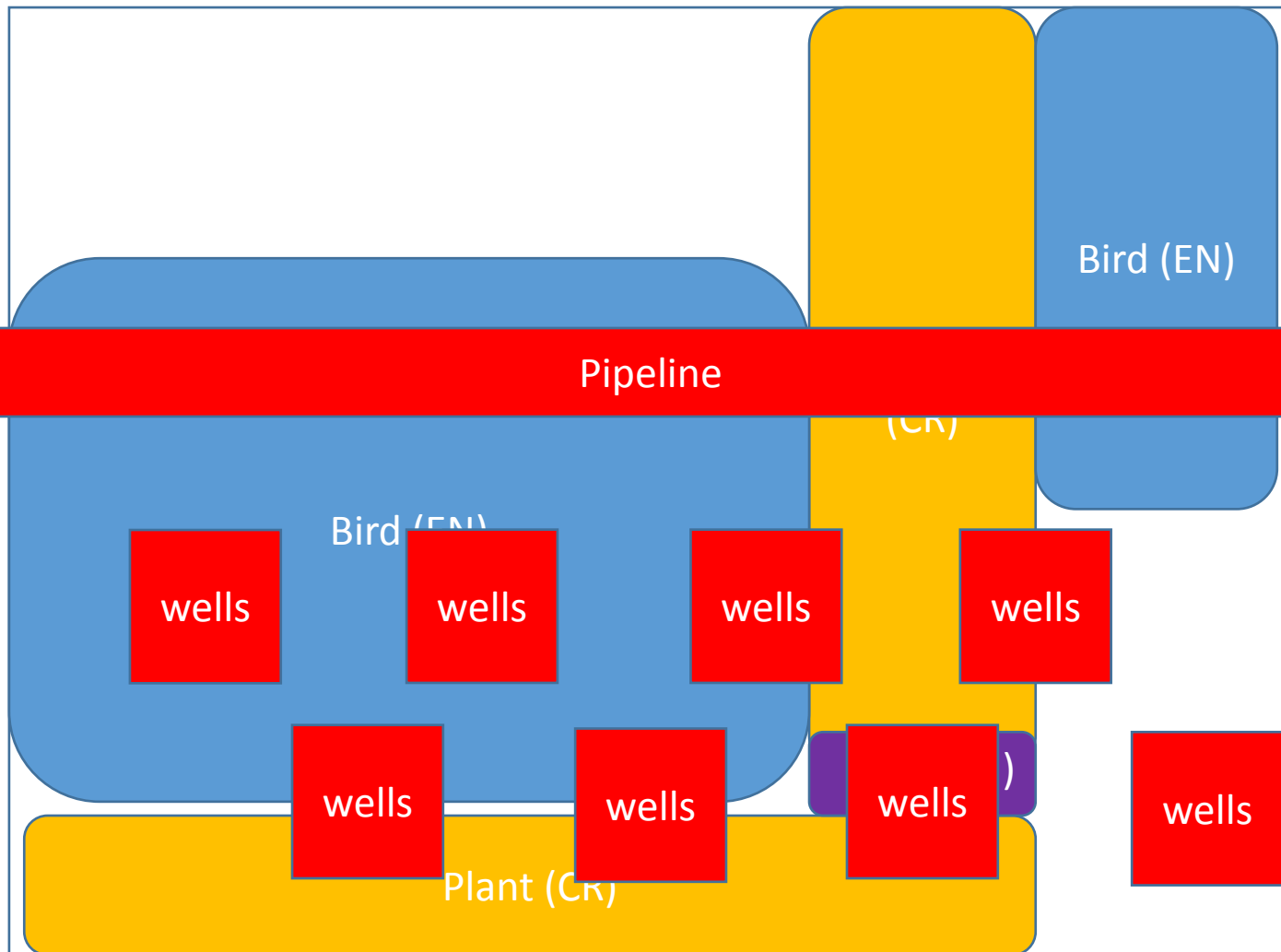
Map
Regional
Biodiversity /
Priorities
using IUCN
data



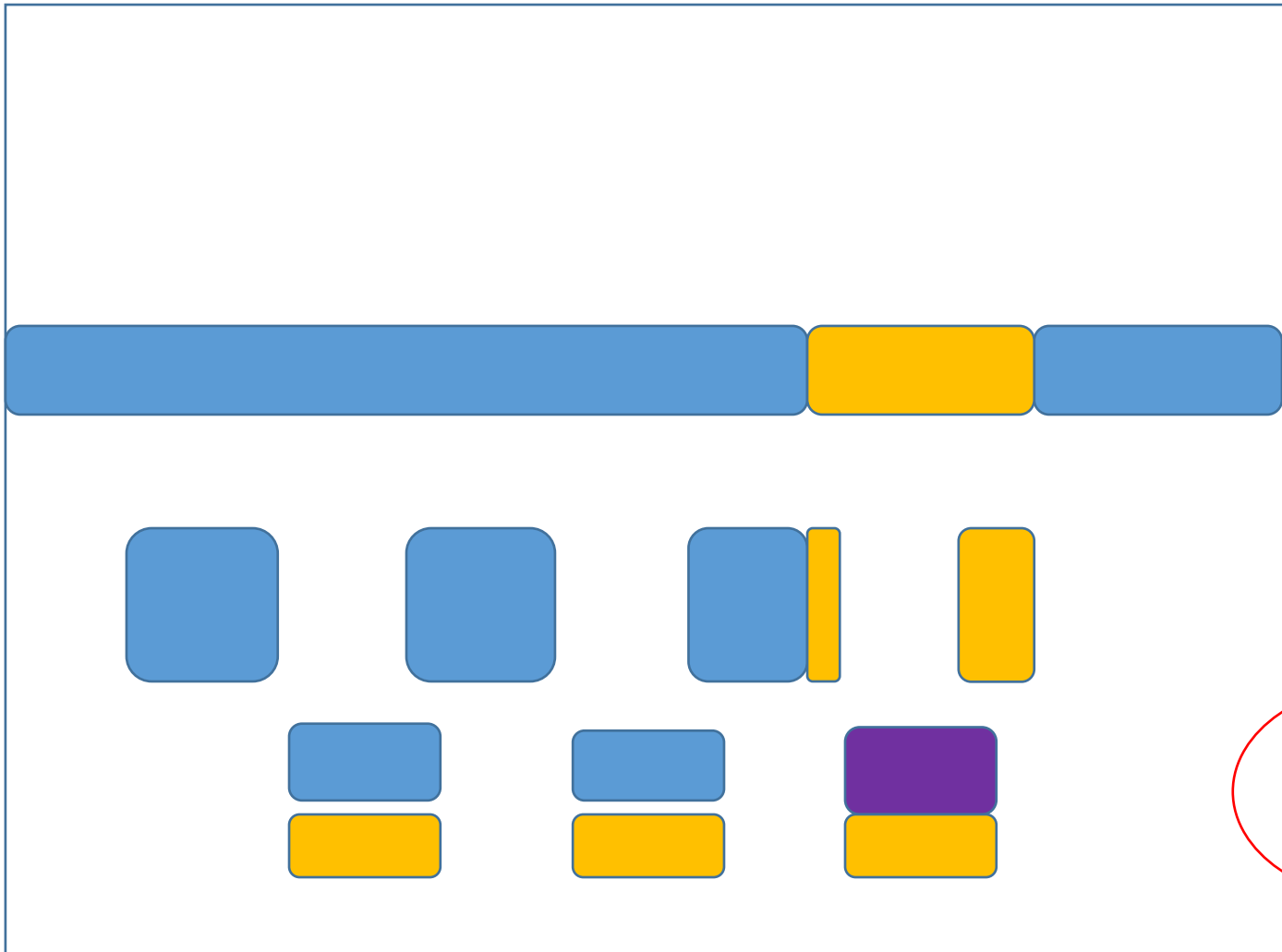
Prioritise biodiversity for inclusion using IUCN maps and IUCN Threat Status



Assess Project Design with Engineers – map all footprint and activities



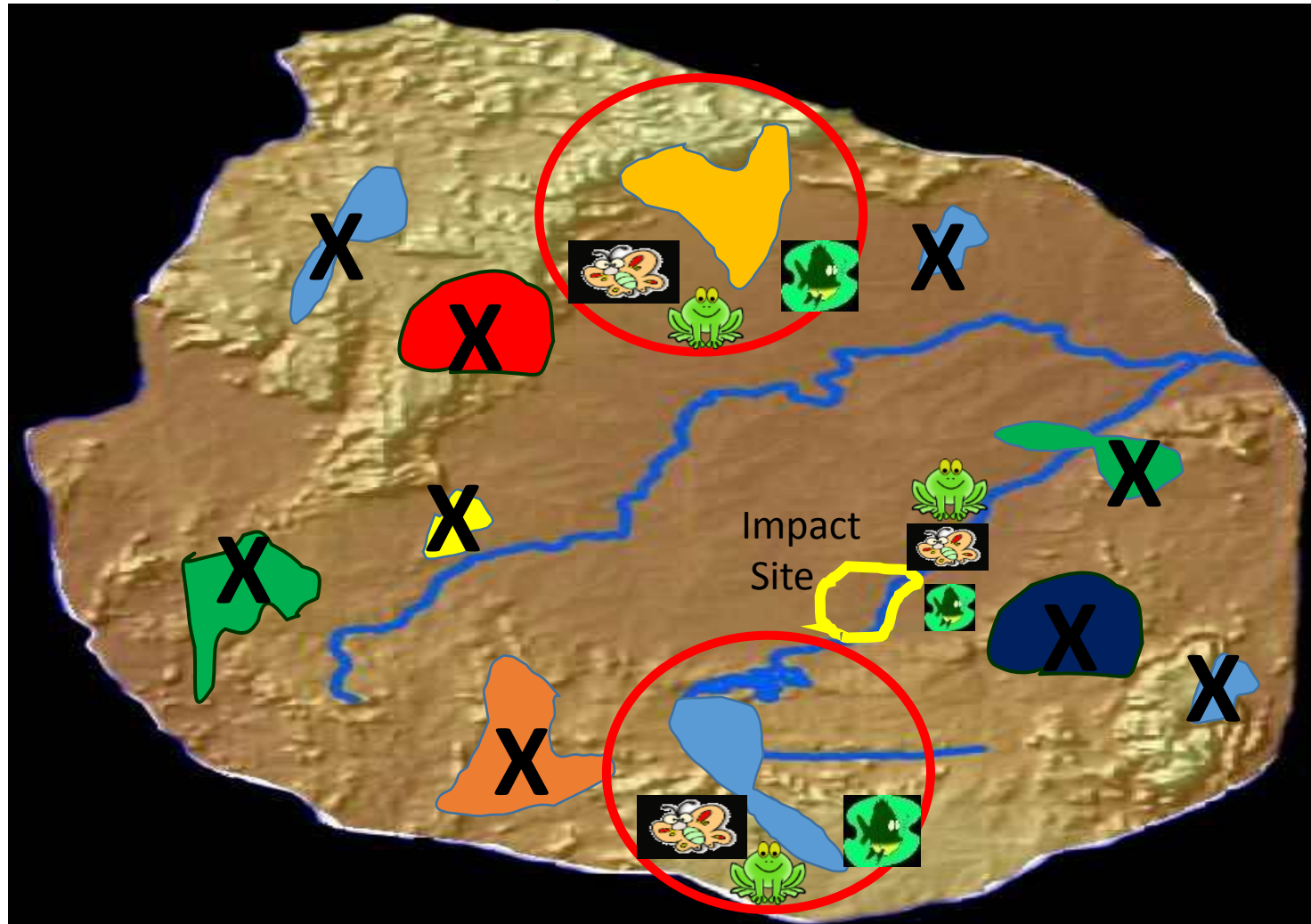
Calculate residual impact in hectares



Bird = 75ha
Plant = 40ha
Bear = 5ha

4. Screening region for biodiversity offset sites

(Red List, KBAs, Protected Planet etc)



“Could this project comply with IFC PS6?”

IUCN Red List tells you which species are at which sites

What questions is IUCN data less likely to contribute to?

- Is the site in Natural Habitat? (other datasets / field work required)
- What species are definitively found at a site? What is their precise distribution? (field surveys)
- Design of mitigation and biodiversity action plans (ecological and social knowledge, field data)
- Technical feasibility of offsets:
 - Counterfactual data
 - Restoration potential data
- Offset development and implementation
 - What are the technical and political risks of offset success?

Take home messages - Wins

- ✓ 1. What are the biodiversity risks for this region / site?
- ✓ 2. Is this site in Critical Habitat?
- ✓ 3. What is the predicted size of residual impacts?
- 4. How to apply the mitigation hierarchy?
- ✓ 5. Where are possible offset sites?

Several projects have achieved financial close with IFC through the use of Red List and other data, where field data was incomplete.

Take home messages - challenges

1. Need to combine Red List with other datasets to reach scientifically defensible position (e.g. global / national habitat maps, species ecology etc).
2. Expertise is required to handle data correctly.
3. Some OECD countries have better developed national maps of species occupancy (e.g. USA, Canada)

Horizon scan

1. IUCN “Extent of Suitable Habitat” maps – will be very useful for CH, NNL, offsets
2. IUCN Red List of Ecosystems will provide level playing field for habitat level risk assessments