Industrial expansion, and safeguards for biodiversity

Dr Joseph W. Bull

Photo: Bull

Introduction

- Dr Joseph Bull
- Associate Professor in Climate Change Biology, Oxford
- Working in the Aral Sea region since 2010
- Most recently, on Resurrection Island (UK Darwin Initiative funded)
- Focused on:
  - biodiversity conservation
  - industrial development
  - environmental change

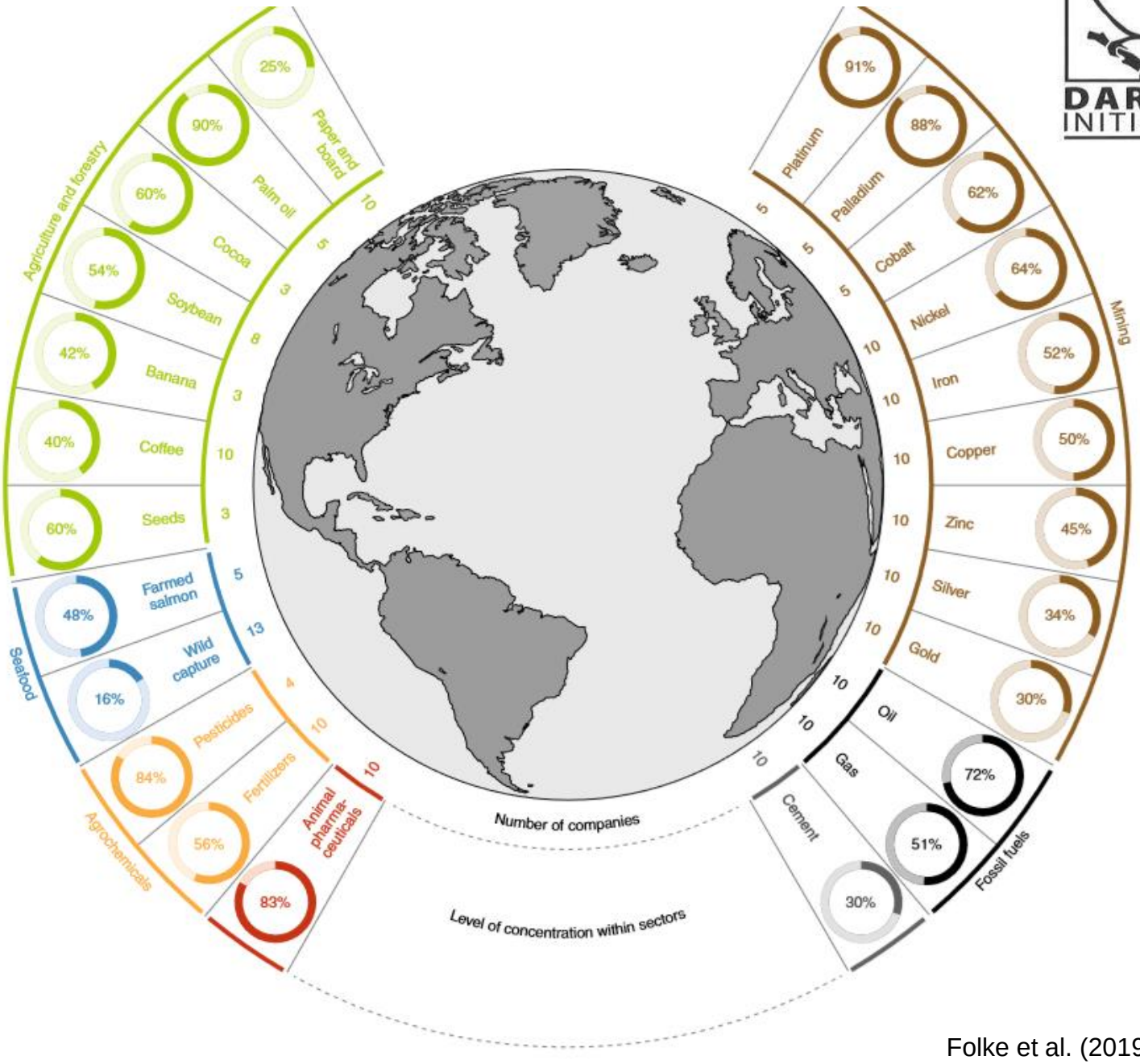
Contents

- Biodiversity impacts of industrial expansion
  - In general
  - In Karakalpakstan
- Biodiversity safeguards and action plans
- Practical: designing action plans that meet safeguards
- Wrap up session:
  - Report back from practical
  - Questions and answers

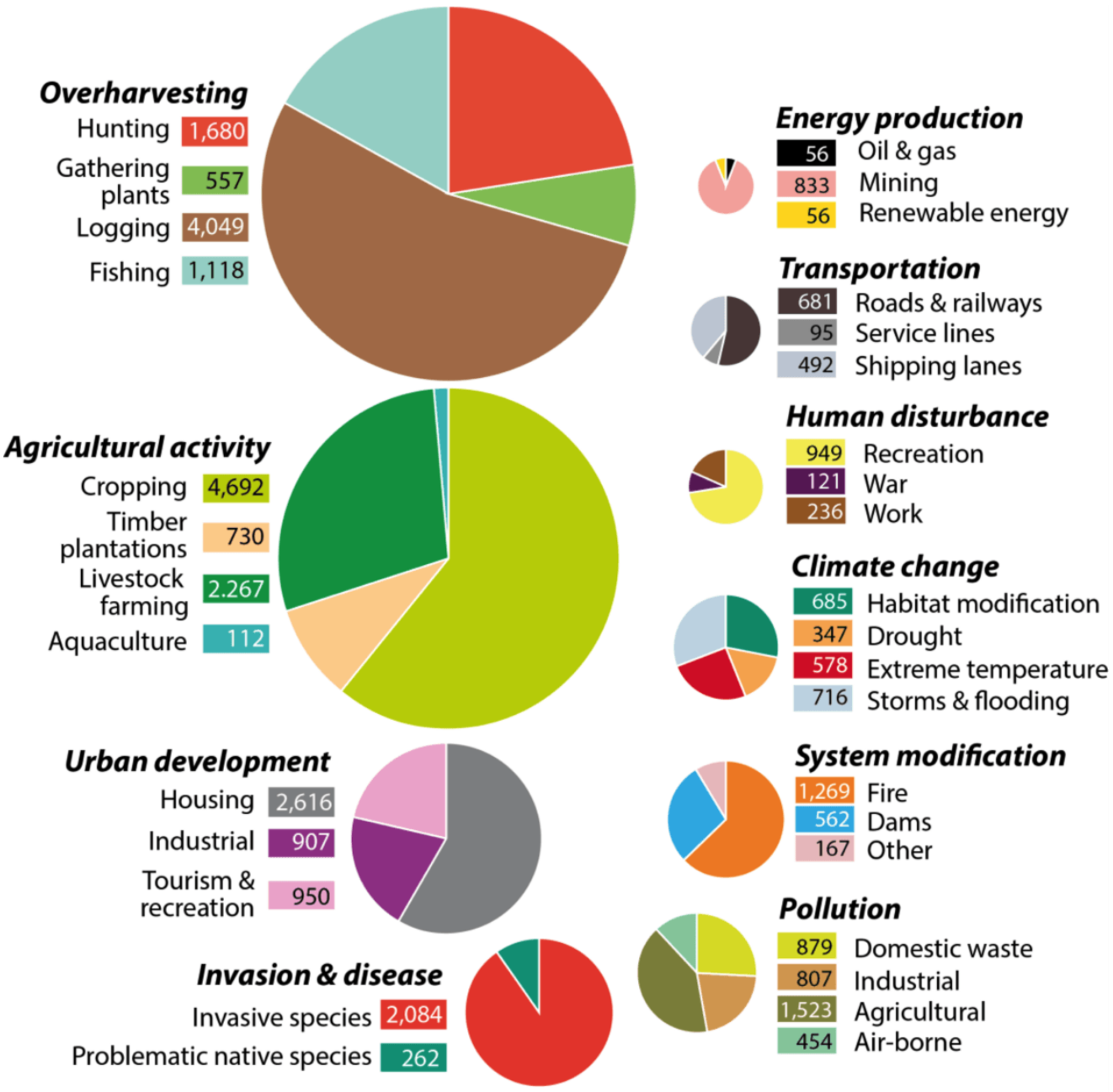
Contents

Время	Пункт повестки дня
09:30 – 10:00	**Регистрация участников**
10:00 – 11:00	**Воздействие промышленного роста на биоразнообразие** - **В глобальном аспекте** - **Добыча природного газа в Каракалпакстане**
11:00 – 11:30	**Перерыв на кофе**
11:30 – 12:30	- **Гарантии для сохранения биоразнообразия (например IFC, ADB)** - **Планы действий по сохранению биоразнообразия (BAP)**
12:30 – 13:30	**Обед**
13:30 – 14:30	**Практика: разработка BAP, отвечающего требованиям безопасности**
14:30 – 15:00	**Перерыв на кофе**
15:00 – 16:00	- **- Отчеты результатов практического занятия** - **- Вопросы и ответы** - **- Закрытие 1-го дня**

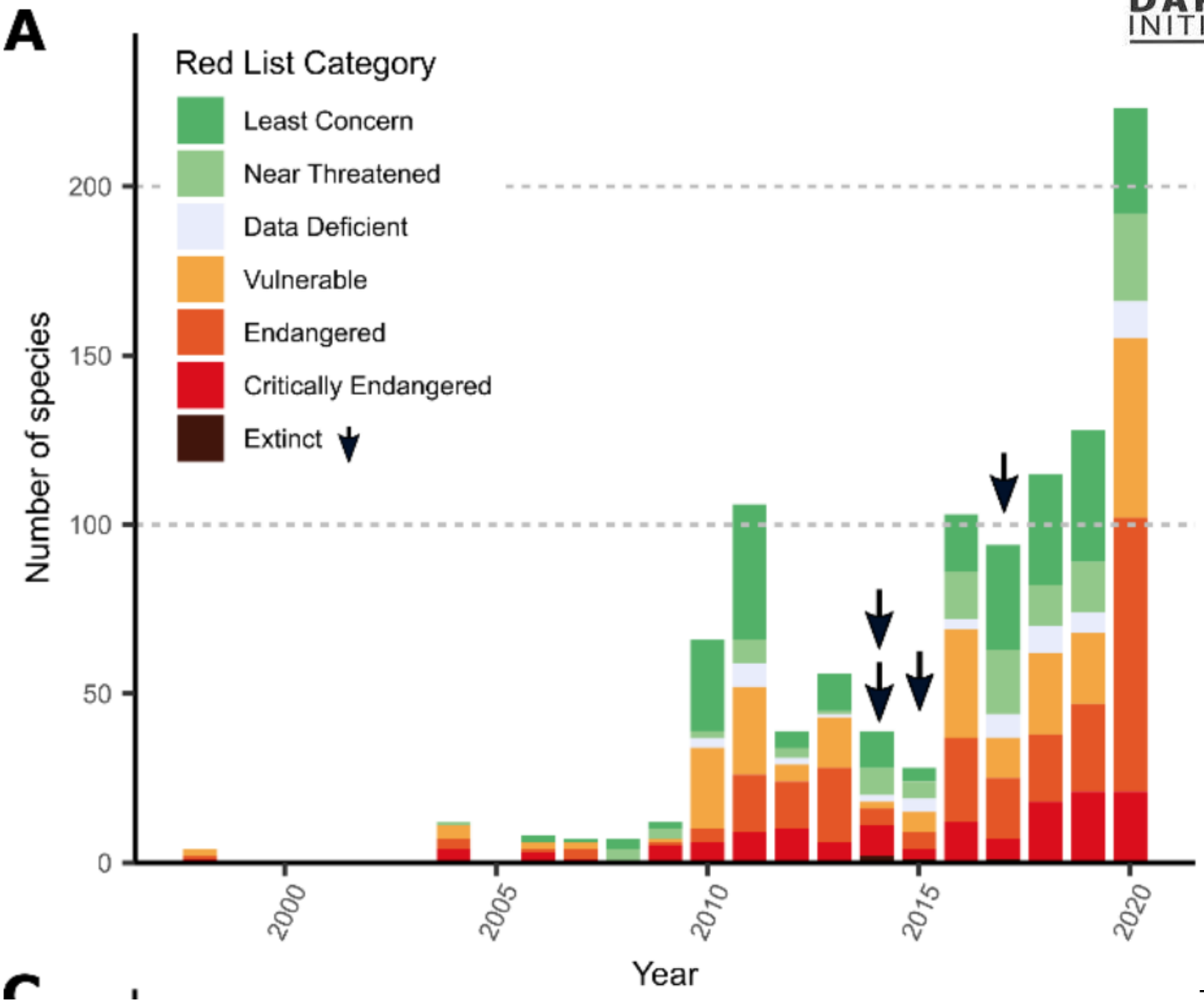
BIODIVERSITY IMPACTS OF INDUSTRIAL EXPANSION



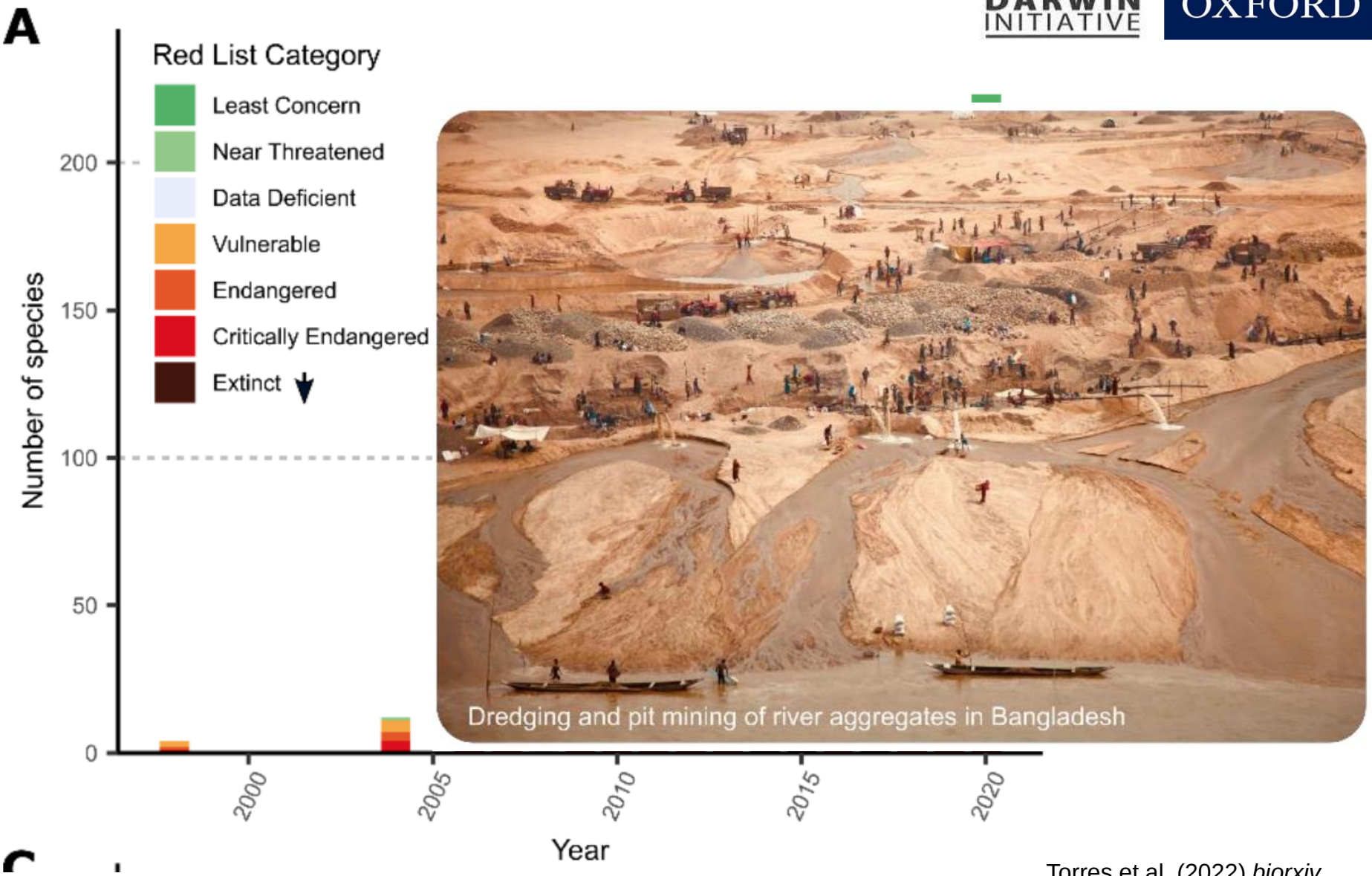
Folke et al. (2019) *Nature Ecology & Evolution*



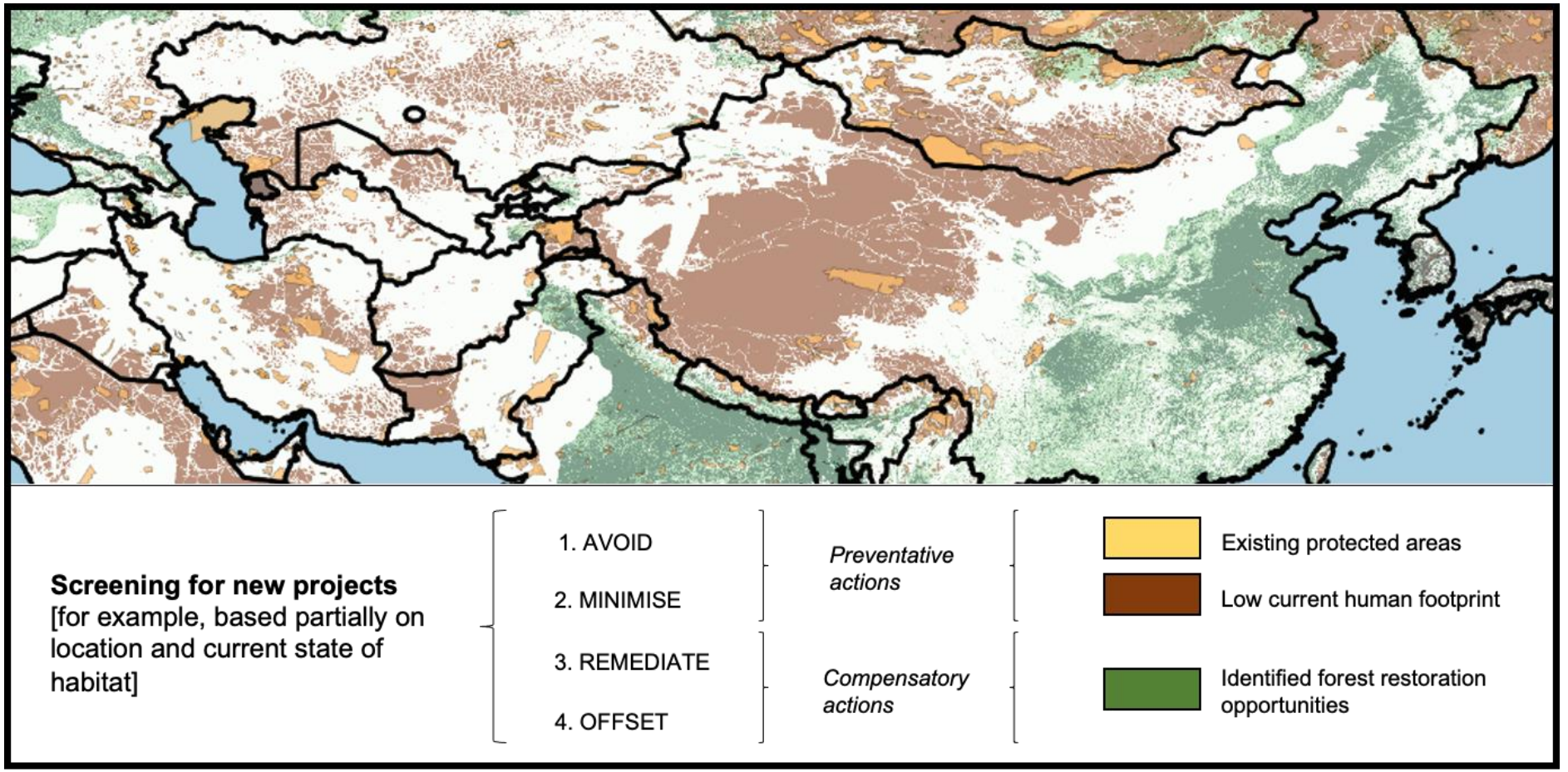
Maxwell et al. (2016) *Nature*



Torres et al. (2022) *biorxiv*



Torres et al. (2022) *biorxiv*



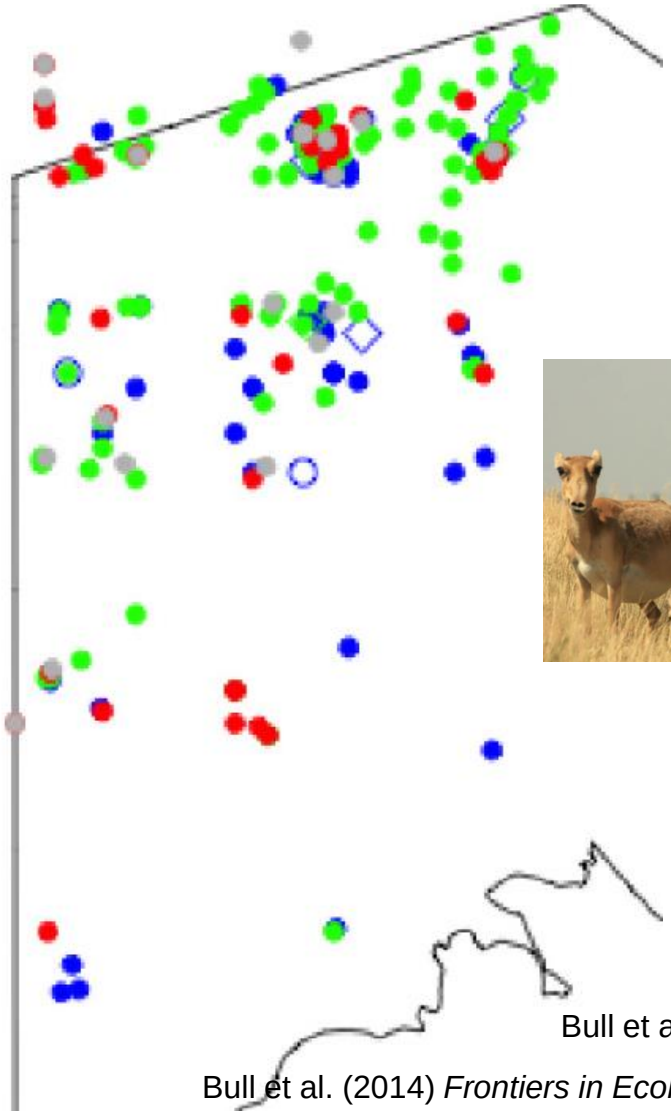
Bull et al. (2019) *Nature E&E*

Example: A380 upgrade

For example:

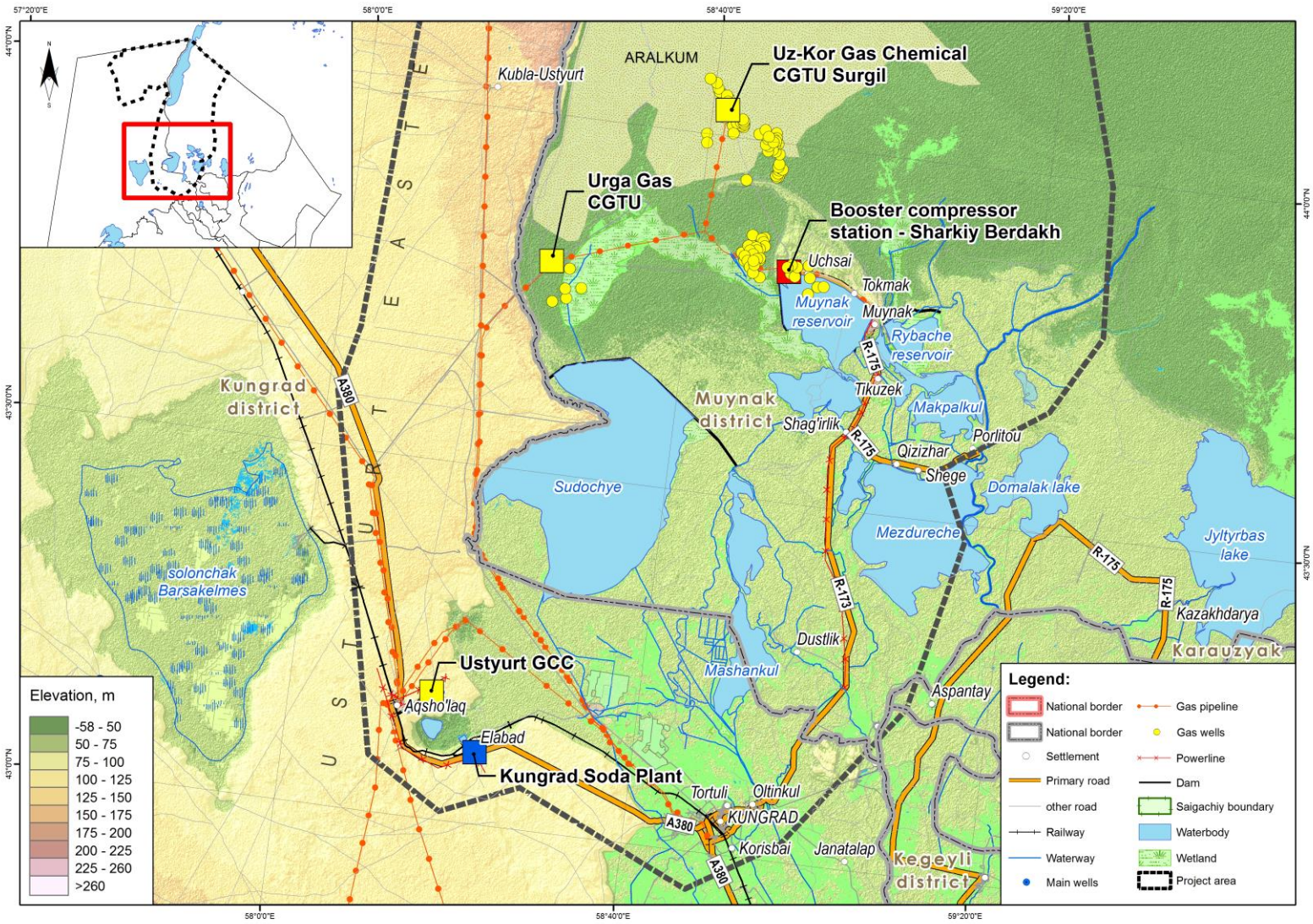
- Resource extraction
- Habitat clearance
- Air pollution
- Wildlife species disturbance

Example: A380 upgrade



Bull et al. (2015) *Land Use Policy*

Bull et al. (2014) *Frontiers in Ecology and the Environment*


Uz-Kor Gas Chemical
CGTU Surgil
Urga Gas
CGTU
Booster compressor
station - Sharkiy Berdakh
ARALKUM
Kubla-Ustyurt
Uchsai
Tokmak
Muynak
Muynak
reservoir
Rybache
reservoir
Tikuzek
Makpalkul
Porlitou
Qizizhar
Shege
Shag'irlik
Muynak
district
Kungrad
district
Sudochye
Domalak lake
Mezdureche
Jyltyrbas
lake
Solonchak
Barsakelmes
Ustyurt GCC
Aqsho'laq
Elabad
Kungrad Soda Plant
Tortuli
Oltinkul
KUNGRAD
Korisbai
Janatalap
Kegeyli
district
Dustlik
Mashankul
Aspantay
Kazakhdarya
Karauzyak
A380
R-175
R-173
Elevation, m
-58 - 50
50 - 75
75 - 100
100 - 125
125 - 150
150 - 175
175 - 200
200 - 225
225 - 260
>260
Legend:
National border
National border
Settlement
Primary road
other road
Railway
Waterway
Main wells
Gas pipeline
Gas wells
Powerline
Dam
Saigachiy boundary
Waterbody
Wetland
Project area

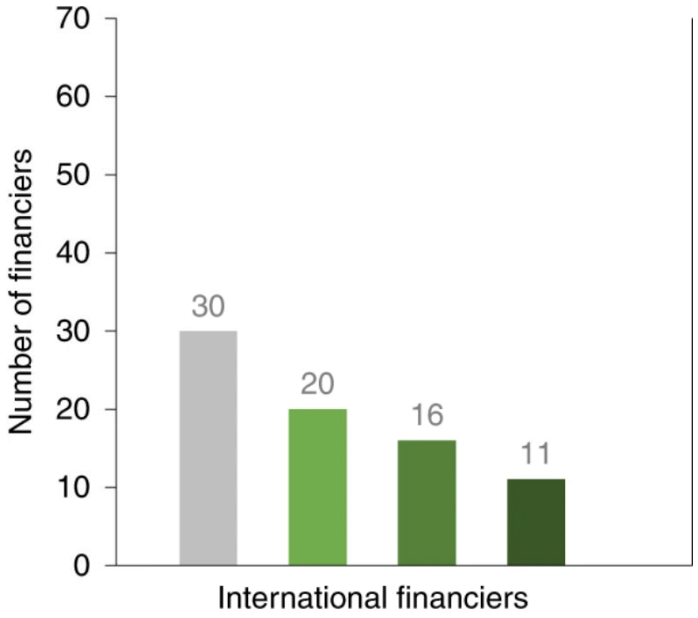
Photos: Esipov, Bykova, Bull

BIODIVERSITY SAFEGUARDS AND ACTION PLANS

Safeguards

- Key driver of good practice biodiversity impact mitigation
- Biodiversity safeguards associated with project finance
- E.g. International Finance Corporation (IFC), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD)
- Require specific actions to limit biodiversity impacts

BRI



Total ■ With published environmental policies ■ With requirements on biodiversity impact mitigation ■ Require net gain in critical habitat

Narain et al. (2020) Nature Sustainability

ADB safeguard

- The Asian Development Bank (ADB) Safeguard Policy Statement (SPS, 2009) Part 1: Environment requires that, for biodiversity:

  "ADB financed projects avoid, and where avoidance is not possible, minimize, mitigate, and/or offset adverse impacts and enhance positive impacts by means of environmental planning and management"

- A revised safeguard policy is expected in 2023

Safeguard: some themes

- Scoping, baseline surveys, full mitigation hierarchy
- Limits to impacts, no-go criteria
- Stakeholders: engagement, grievance mechanisms, marginalised groups
- Project Management
- Auditing, Monitoring, and Reporting
- Target-setting
- Relevant expertise
- Cultural resources, ecosystem services

Management plans

Biodiversity Action Plan (IFC)

- For all projects significantly impacting natural habitats and projects in critical habitats, need auditable Biodiversity Management Plan or equivalent
- A Biodiversity Action Plan is required for projects, describing how the project will achieve net gain, roles and responsibilities, timelines
- A BAP differs from a BMP in that the latter is an operational document developed largely for site managers and contractors; whereas the BAP will almost always include actions off-site and external partners

Environmental Management Plan (ADB)

- The borrower/client will prepare an environmental management plan (EMP) that addresses the potential impacts and risks identified by the environmental assessment.
- Include mitigation measures, environmental monitoring and reporting requirements, schedule, cost estimates, and performance indicators.

Good practice

- Biodiversity impact mitigation is difficult
- Often doesn't achieve full goals
- Common weaknesses are:
  - Theoretically good design, practically infeasible
  - Poor engagement of local stakeholders
  - Weak implementation, owing to limited incentives from monitoring, oversight, and penalties
  - Lack of mechanisms to assure permanence – e.g. for long-term management, and to secure land management rights

Good practice

- Enhance screening by:
  - Implement protocol for directing projects to biodiversity specialists where ‘flags’ are raised
  - Externally validating baseline assessments
- Define precautionary principle based on:
  - burden of proof before proceeding (e.g. balance of probabilities for impacts)
  - over-compensation for impacts (i.e. large multipliers)

Good practice

- Ensure adequate finance, by:
  - detailing minimum components to be incorporated into budgets, e.g. (i) conservation measures, (ii) long-term monitoring, (iii) capacity building, etc.
  - specifying duration of costed budgets
  - transitioning finance for implementation to a relevant third party ('implementor')
- Tackle temporal issues, including definition on:
  - maximum acceptable time lags between construction and offset implementation, as a proportion of project lifespan
  - offset duration ('in perpetuity', 'as long as impacts')

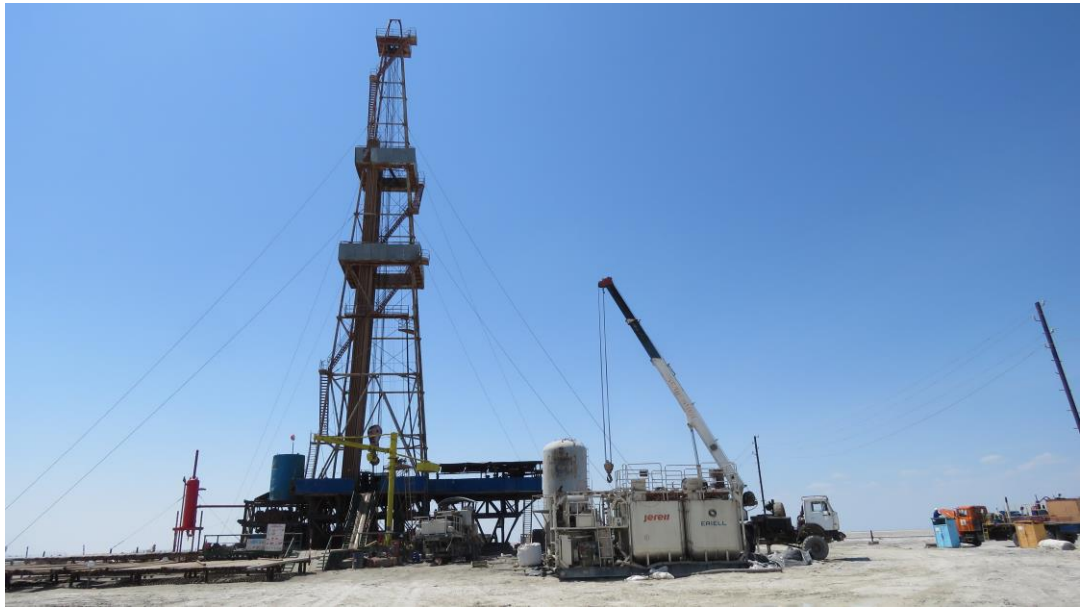
Good practice

- Landscape-scale conservation outcomes:
  - require offset strategies to demonstrate complementarity with, and additionality, to national/international net gain plans (under CBD post-2020 strategy)
- Recognize the importance of capacity-building, by:
  - incorporating it as a feasibility test
  - budgeting for it
  - scheduling time for it in action plans

PRACTICAL SESSION

Practical session

- Split into groups
- Take an example development projects that is relevant to your group, e.g.:
  - Road upgrade
  - Natural gas drilling site
  - Non-metallic mining site
- Define three likely biodiversity impacts
- Outline an action plan for managing those impacts
- Present after coffee



WRAP UP SESSION

Wrap up session

Each group present (5 minutes each)

Wrap up session

Question and Answer session

Thank you

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ResurrectionIslandProject