THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

Putting biodiversity offsetting in its place

giving meaning and teeth to the mitigation hierarchy and limits to offsetting

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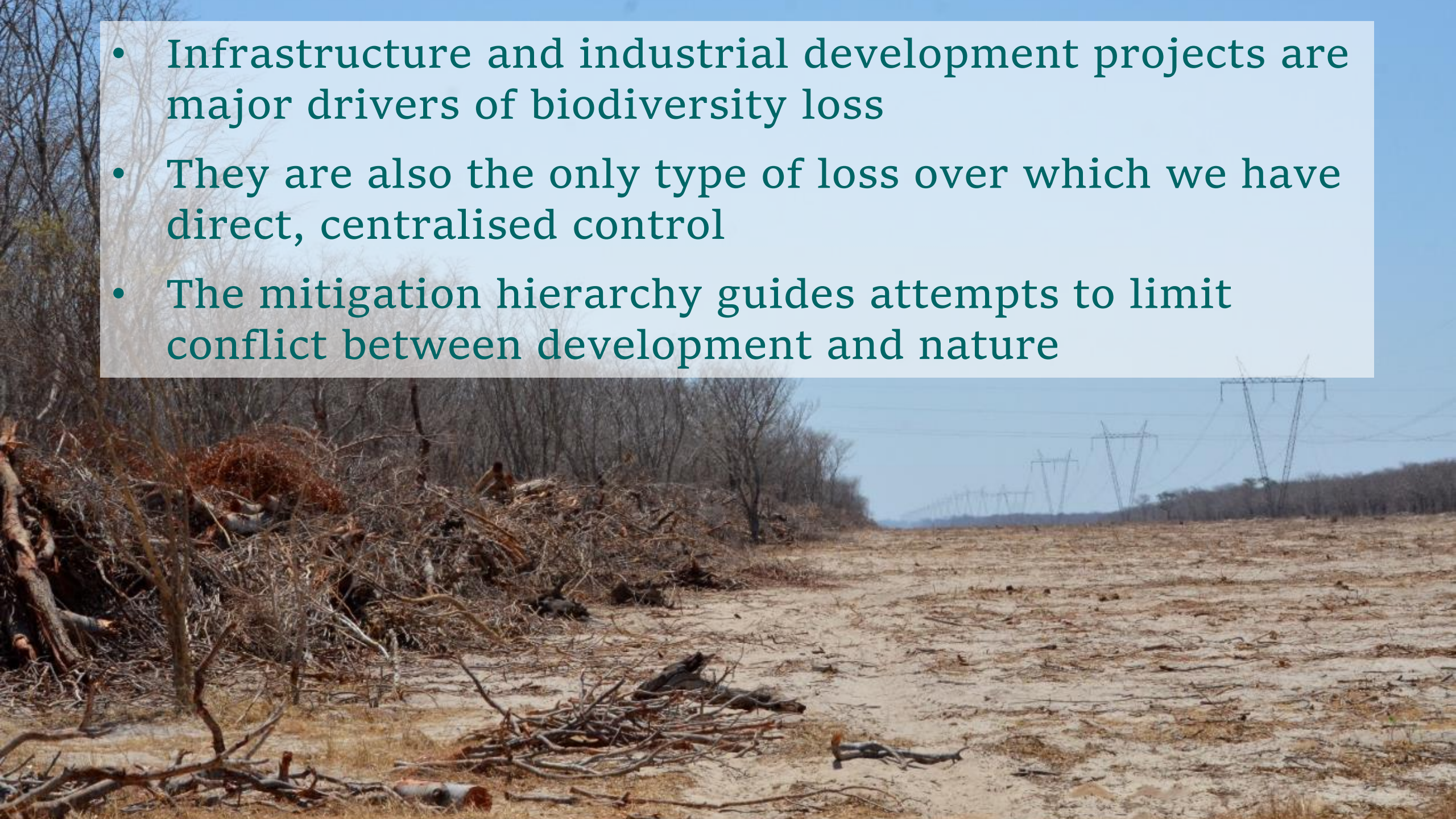
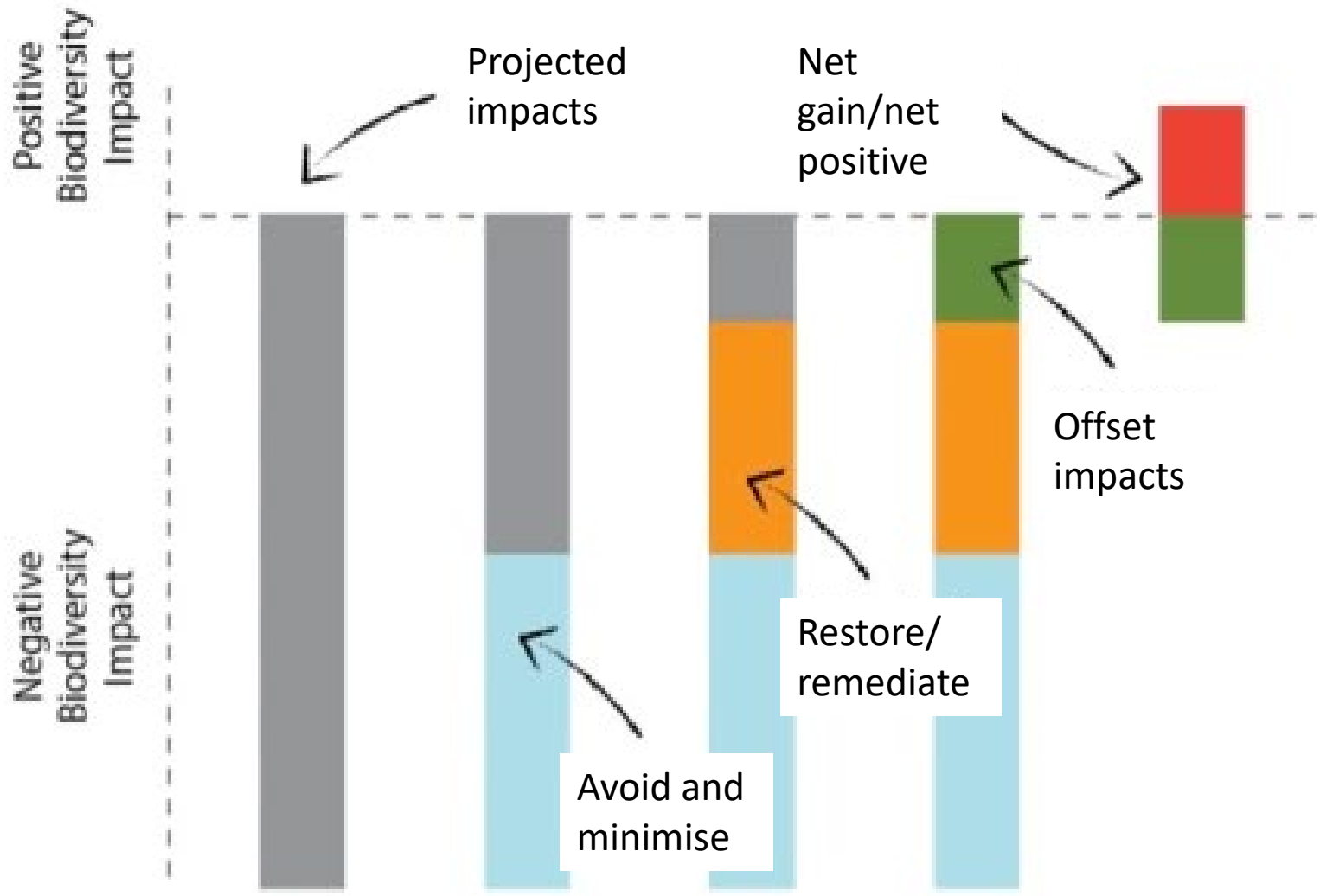
ipbes

The Global Assessment Report on Biodiversity and Ecosystem Services



- Infrastructure and industrial development projects are major drivers of biodiversity loss
- They are also the only type of loss over which we have direct, centralised control
- The mitigation hierarchy guides attempts to limit conflict between development and nature

The mitigation hierarchy



http://www.sustainableprosperity.ca/fr/blog/welcome-anthropocene-biodiversity-or-lack-thereof-under-our-influence

Offsetting

- Attempt to (at least) counterbalance negative impacts on biodiversity that remain after all attempt to avoid, minimise and restore
- Gains must be equivalent to losses:
  - Same type
  - Same amount
  - Same duration

Offsetting

- Achieved through
  - Restoration, enhancement, threat reduction, protection
- Required by
  - Governments
  - Financiers
  - CSR policies
- Delivered via
  - Direct by proponent
  - Payment to third party provide
  - Credit purchase in a market
  - Purchased by central fund

https://www.sciencelearn.org.nz/resources/1459-riparian-restoration

Best-case scenario: what is offsetting meant to achieve?

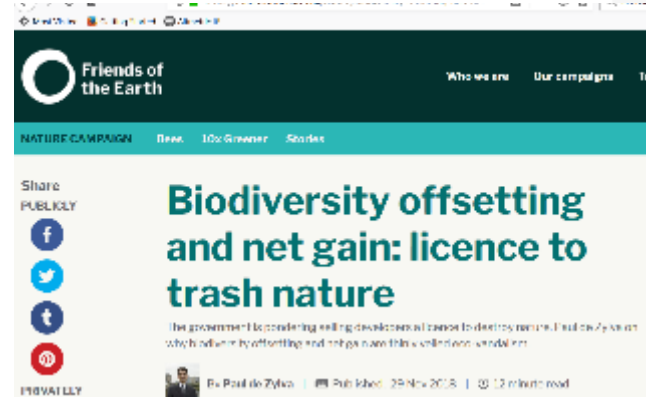
- Disincentive to do environmental destruction
- Limit permitted destruction to what can be counterbalanced
- Replacement cost of biodiversity factored into development

- Most importantly: no net loss (at least) – at least relative to change without the regulated developments…

Why aren't offsets living up to their promise?

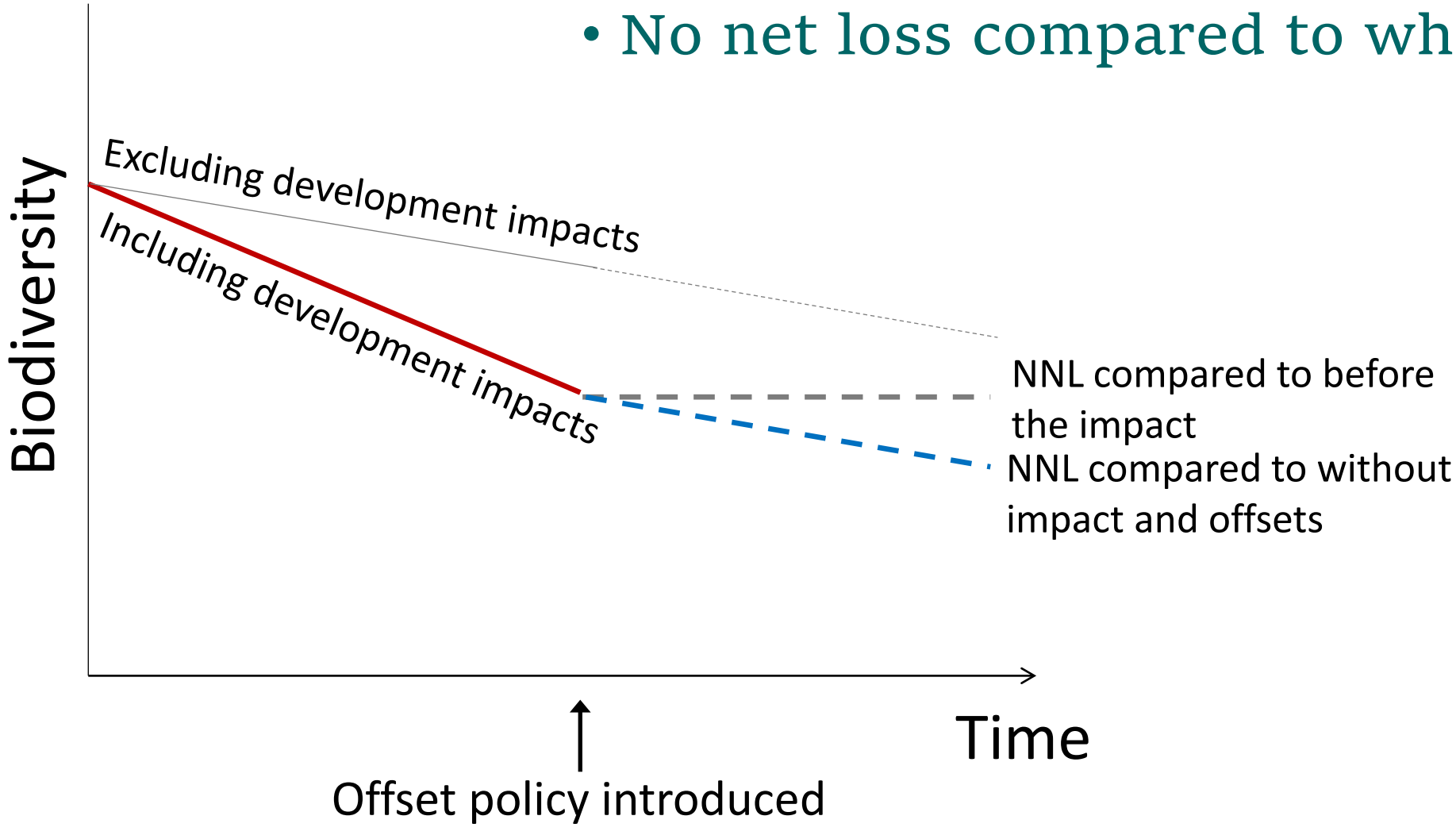
- Many factors involved

1. Frame of reference not explicit
2. Ecological limits not being recognised or respected
3. Poor technical design of calculation approaches and metrics
4. Implementation failures
5. Unintended system distortion



1. Frame of reference

- No net loss compared to what?

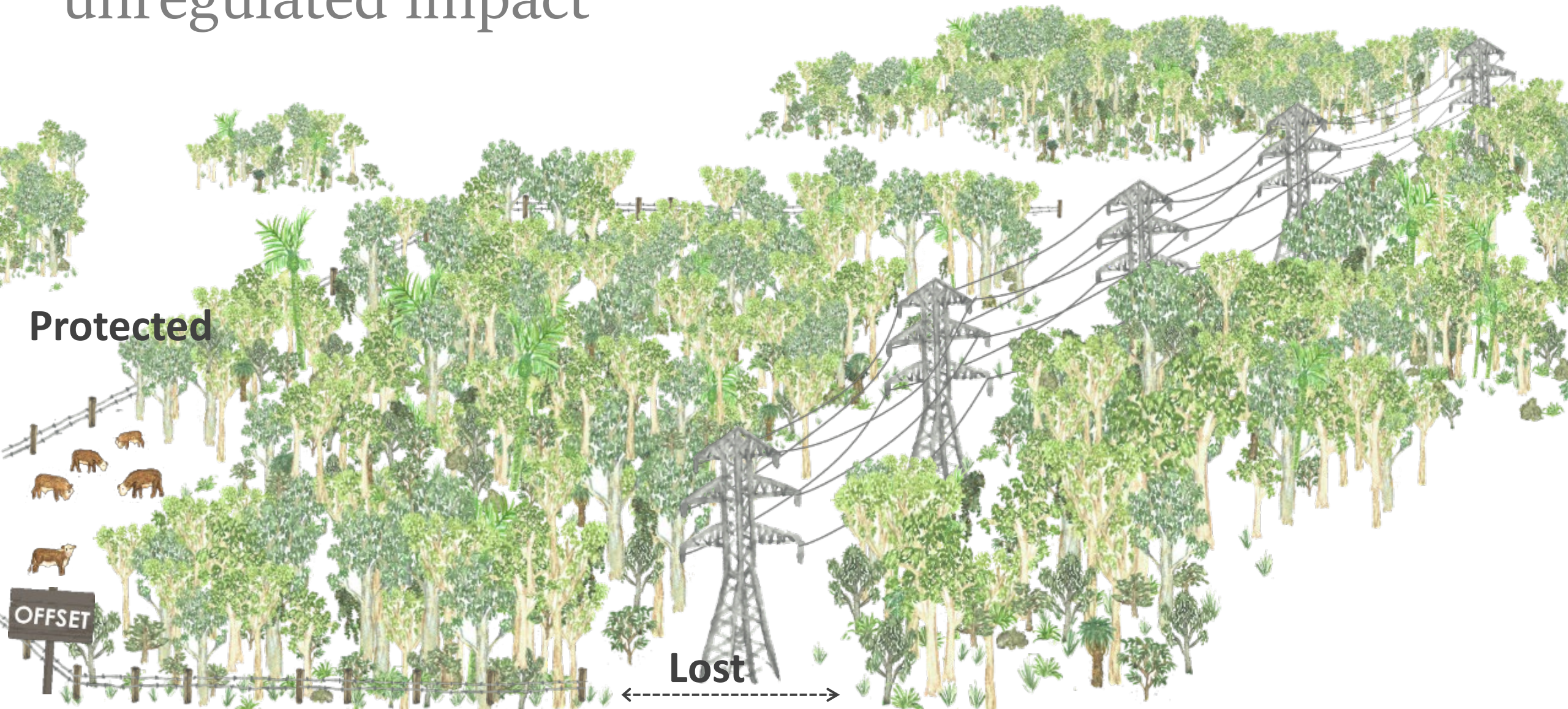


Biodiversity losses

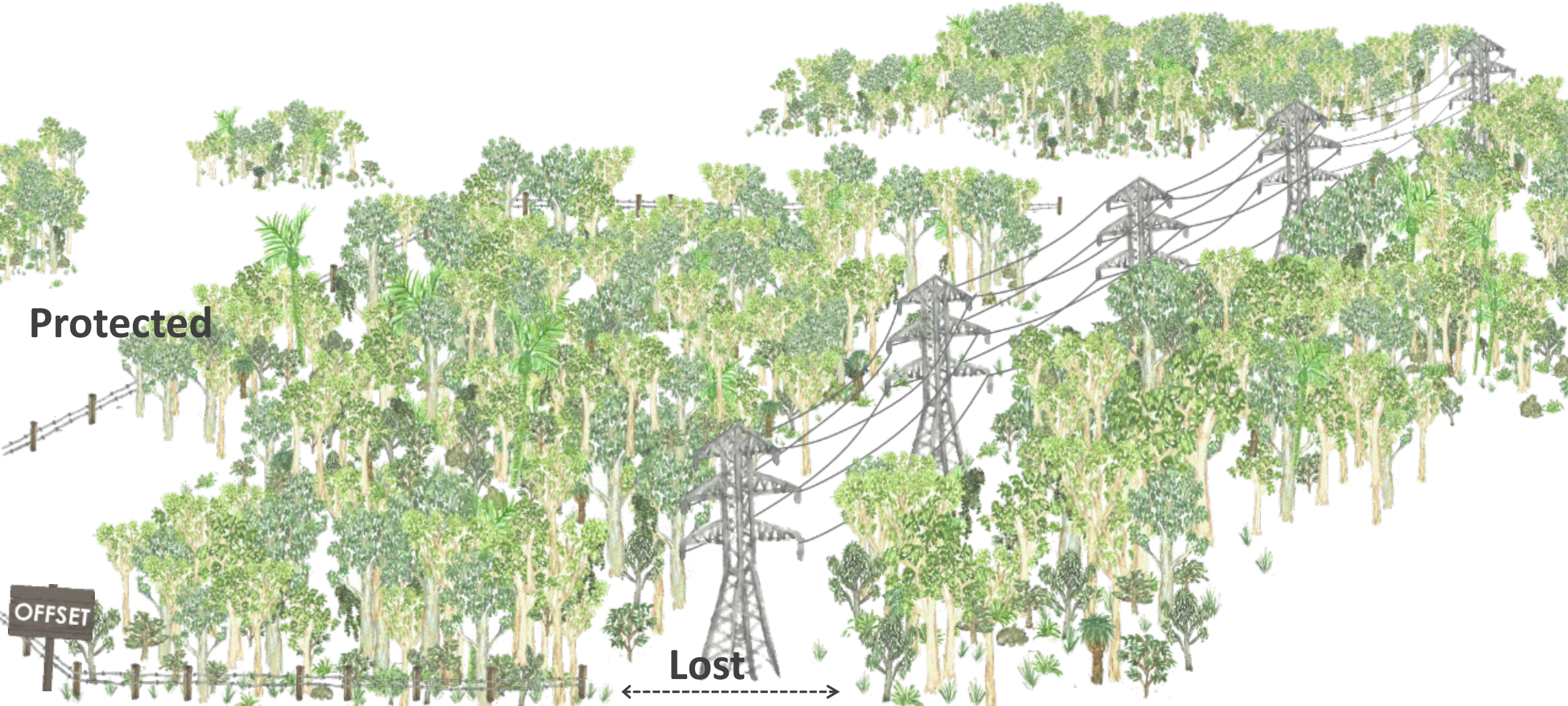
Biodiversity losses are caused by unregulated impacts

Biodiversity losses are caused by unregulated impacts and regulated impacts

A regulated impact can be offset by preventing an unregulated impact



Relative no net loss = absolute *net loss*



Relative no net loss = absolute *net loss*

- ‘Averted loss’ offsetting: prevents some future losses, in exchange for allowing other losses = maintains a net decline of biodiversity
- Relies on there being ongoing threats to avert

1. Frame of reference

- Lessons:
  - Decide carefully and consciously what net outcome you want when designing a compensation policy
  - If absolute cessation of loss is the goal, only increases in biodiversity over time count as gains
  - Consider target-based compensation as an alternative to offsets:
    - https://www.impactmitigation.org/videos/an-alternative-to-biodiversity-offsets-target-based-ecological-compensation

Simmonds et al. 2020. Moving from biodiversity offsets to a target-based approach for ecological compensation. Conserv. Lett. 13 (2), e12695

2. Ecological limits

- Restoration offsets offer potential for real gains over time…
- BUT replacing biodiversity is easier said than done

- Some things can be done fairly reliably and quickly

- Some things can be done fairly reliably, but slowly

- Other things we lack evidence that we can do at all

Maron *et al*. 2012. Faustian bargains: Restoration realities in the context of biodiversity offset policies. *Biol Conserv* 155: 141-148.

2. Ecological limits

- Lessons:
  - Re-creating lost biodiversity is usually at least difficult, and often impossible
  - Expect it to be expensive
  - Never rely on unproven restoration approaches to counterbalance immediate losses of important biodiversity
  - Restoration offsetting works best:
    - For individual elements of biodiversity that are clearly defined (eg particular species)
    - When habitat can be rapidly created/improved
    - When counterbalancing loss of poor-quality impact sites

Maron *et al*. 2012. Faustian bargains: Restoration realities in the context of biodiversity offset policies. *Biol Conserv* 155: 141-148.

3. Technical design

Calculation approaches

- Failure to focus on additionality – tend to focus on site condition
- Counterfactuals often implicit, unrealistic, and inconsistent with desired outcomes
- Overestimation of risk of loss is common
- Uncertainty and time lags poorly accounted for

Metrics/indicators/indices

- Combining multiple values in a single tradeable metric -> unintended substitutions

Maron M, JW Bull, MC Evans & A Gordon (2015). Locking in loss: Baselines of decline in Australian biodiversity offset policies. Biological Conservation. http://dx.doi.org/10.1016/j.biocon.2015.05.017

3. Technical design

- Lessons:
  - A plausible and robust counterfactual is the basis of sound accounting
  - Counterfactual scenario, desired net outcome, and assumptions about estimated gain all must be logically consistent
  - Build in ‘reality checks’
  - Separate accounting for each element of biodiversity that we care about

Gibbons et al. 2016. A loss-gain calculator for biodiversity offsets and the circumstances in which no net loss is feasible. Conserv. Lett. 9:252-259
Maseyk et al. 2020. Improving averted loss estimates for better biodiversity outcomes from offset exchanges. Oryx
Maseyk et al. 2020. A disaggregated biodiversity offset accounting model to improve estimation of ecological equivalency and no net loss. Biol. Conserv. 204:322-332

4. Implementation failures

- Implementation (did it get done, and did it work?)
  - Information often not available, but where it is, outcomes are poor:
    - 30% of WA offsets not, or inadequately, implemented (May et al. 2017)
    - ~10% of nest boxes intended to replace tree hollows collapsed within 3 years (Lindenmayer et al. 2018)
    - ~2/3 offsets reported failure to achieve no net loss (zu Ermgassen et al. 2019)

https://phys.org/news/2017-05-wildlife-displaced-hume-highway-hasfailed.html

Mason Crane

4. Implementation failures

- Lessons
  - Avoid kicking the can down the road: set out the details of required offsets, **and their outcomes**, in permit conditions
  - Include the cost of monitoring evaluation and reporting in the scheme
  - Set up publically-accessible offsets register before the scheme starts, and report regularly

5. Unintended system distortion

- Adding offsets to the policy mix leads to a tangle of consequences – and some are dangerous
- For example: incentive to maintain high rates of loss
  - Averted loss offsets are common, but rely on there being a loss to avert
  - The greater the risk of loss, the smaller and cheaper offsets can be
  - Conservation actions reduce the availability of places for offset credits
  - Removal of native vegetation protection in Queensland once promoted as a way to open up opportunities for landholders to sell offset credits!

Gordon et al. 2015. Perverse incentives risk undermining biodiversity offset policies. J. Appl. Ecol. 52:532-537.

5. Unintended system distortion

- Disincentive to continue to do good things for free – why not do it as an offset and be paid?
- Environmental charities seeking funds tempted by offset $
- Offset delivery is provision of a service to a commercial entity
- Volunteers may not understand the difference

Maron and Louis 2018. Does it matter why we do restoration? Volunteers, offset markets and the need for full disclosure. Ecolog. Mgt. Restor. 19 (S1) 73-78

Volunteers feel duped by land ‘greed’

Ecologist John Briggs... “I’m really disappointed that the ACT government has taken such a ruthless view to our efforts.” Photo by Gary Schafer

LANDCARE volunteers from the Watson Community Association have worked hard to restore the natural balance in Justice Robert Hope Park since it was set aside as “urban open space” in 2001 and 2002 after a successful campaign against residential development on the site.

Now they are angry and bewildered. Their adopted park and the work they have done to restore it have been used to justify the destruction of a neighbouring patch of the same critically endangered native woodland.

JANUARY 29 2014

It's becoming harder to see the trees for the revenue

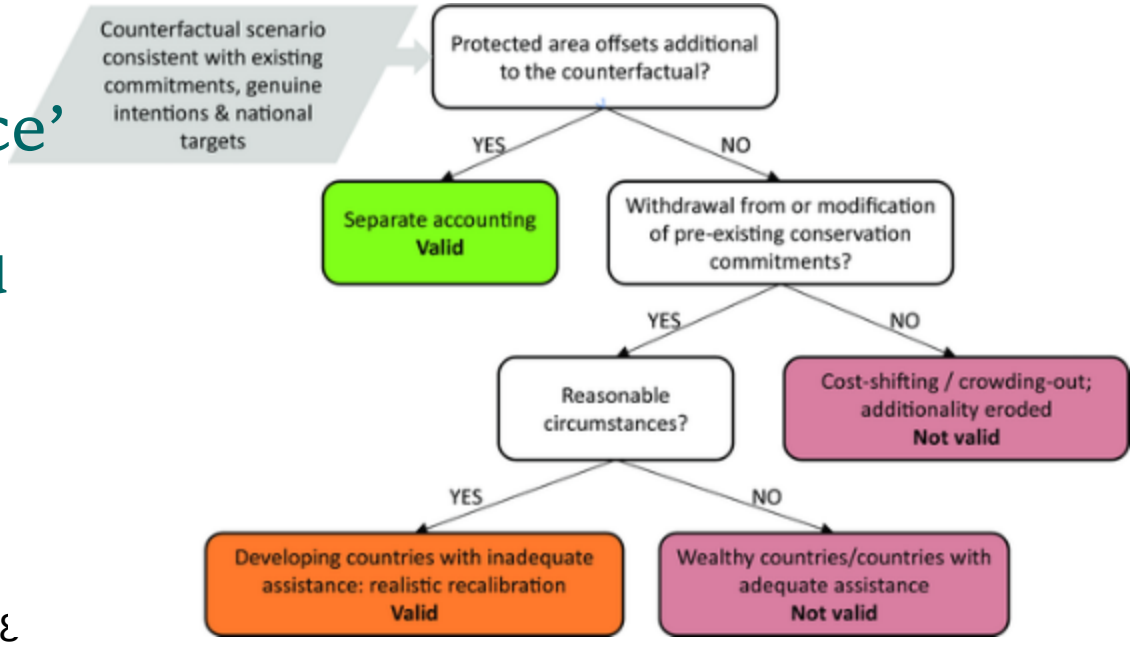
Adoption of the offsets policy is seeing a shift in conservation.

Philip Gibbons, Jochen Zeil

“It is dishonest for the ACT government to retrospectively claim the gains in biodiversity that have accrued because of the goodwill of volunteers to effectively subsidise development. Volunteers may not be keen to offer their services if they knew they were to be used in this way.”

5. Unintended system distortion

- Displacement of other expenditure (eg protected areas)
  - Is this paying for something already promised?
  - Is this replacing conservation spending that otherwise would have occurred?
- Green laundering/'innovative finance' – incentive for destruction
  - Developing reliance on offset-generated funds
  - Positive rhetoric focussed on the offset gain only



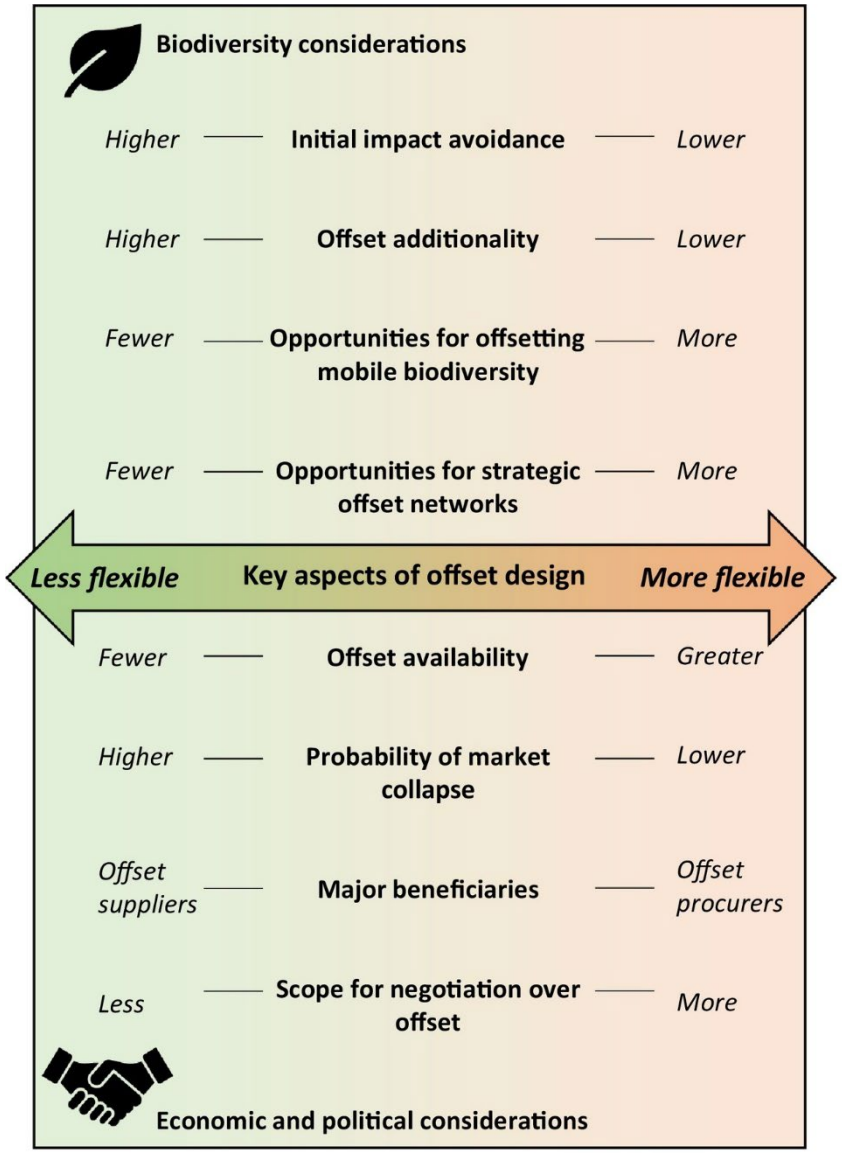
Narain and Maron. 2016. Protecting India's conservation offsets. Science 353:758

Maron et al. 2015. Stop misuse of biodiversity offsets. Nature 523:401

Maron et al. 2016. Interactions between biodiversity offsets and protected area commitments: avoiding perverse outcomes. Conserv. Lett. 9:384-389

5. Unintended system distortion

- Functioning market seen as an end in itself
- Low volume of trades and high prices perceived as bad
- Leads to increases in ‘flexibility’ – e.g. modified trading rules
- Undermines scarcity signal
- Remember the purpose of the market:
  - incentivising avoidance, incorporating true cost of biodiversity loss into business, and ultimately achieving NNL



zu Ermgassen et al. 2020. The hidden biodiversity risks of increasing flexibility in biodiversity offset trades. Biol. Conserv. 252:108861

5. Unintended system distortion

- Lessons
  - We are only now realising the extent of influence that introducing offsets to a system can cause
  - Recognise risks up front and implement safeguards
  - Be vigilant against greenwash
  - Transparency is key

We have a long way to go to get offsets working as they should

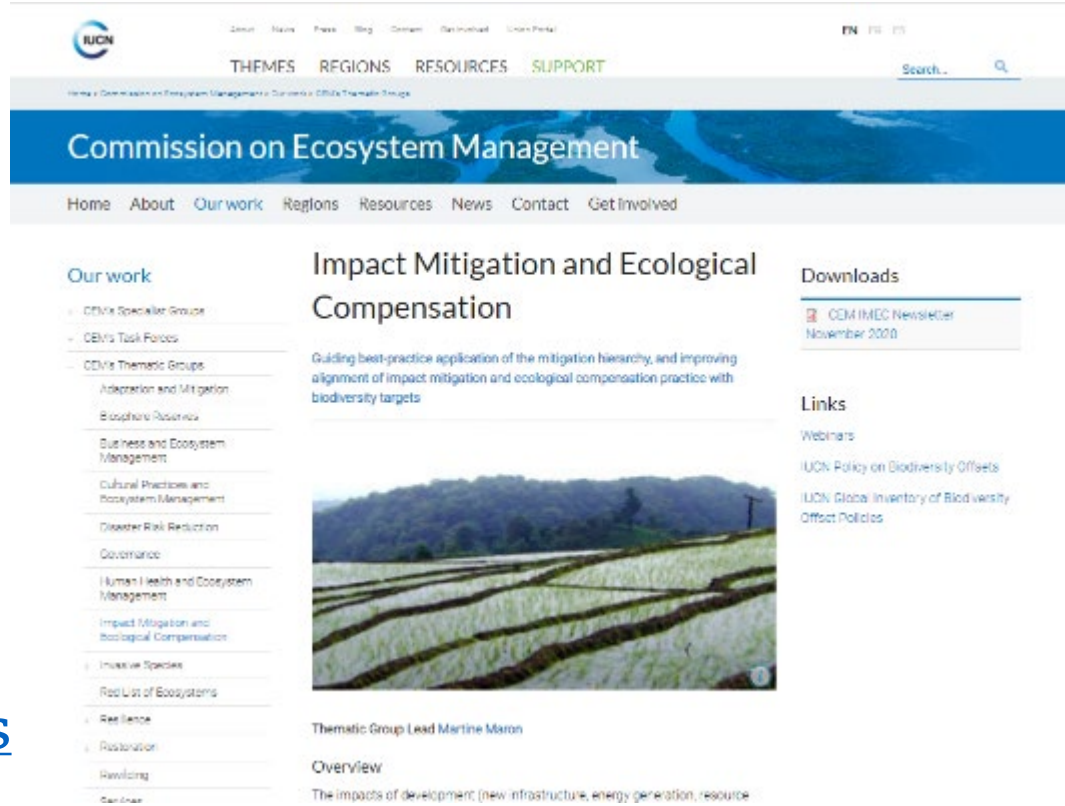
There is a lot we can learn from our failures so far

Few realistic alternatives exist if we are to halt biodiversity decline and support human development. We must get this right.

Thank you

- Join the new IUCN CEM Thematic Group on Impact Mitigation and Ecological Compensation by applying to the Commission on Ecosystem Management https://www.iucn.org/commissions/commission-ecosystem-management/get-involved

- Many of these issues are covered in our new short video series: https://www.impactmitigation.org/videos



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Threatened Species Recovery Hub

National Environmental Science Programme