

A GLOBAL MITIGATION HIERARCHY FOR NATURE CONSERVATION

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INTRODUCTION

The continued extraction of biological resources is threatening the achievement of global goals to protect nature^{1,2}. Our current patchwork of international goals, national plans, and local interventions can result in the gaps and weaknesses of conservation efforts being difficult to identify or articulate³.

We discuss applying the mitigation hierarchy to all negative human impacts upon biodiversity in order to account for all biodiversity losses and gains.

THE MITIGATION HIERARCHY

The mitigation hierarchy works by trying to predict all the negative impacts that are likely to occur as part of a given activity. Once impacts are accounted for, four impact reducing steps – avoid, minimise, remediate, and offset are considered to mitigate biodiversity impacts. The logic in undertaking these steps is to achieve a *No Net Loss* or *Net Gain* of biodiversity.

The four steps mitigation hierarchy represent broad categories of biodiversity impact reduction and compensation, meaning most conservation actions can be categorised within these steps.

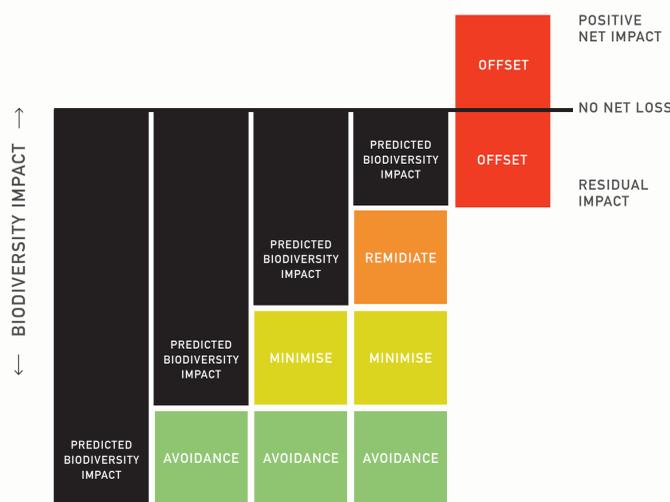
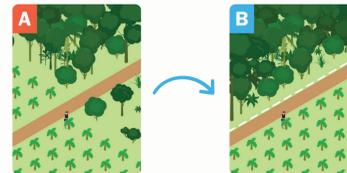


Figure 1: A graphical representation of the mitigation hierarchy



PRE-PLANTATION

Original state of the area prior to palm oil plantation



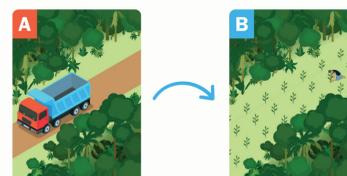
Step 1. AVOID

Avoid deforesting primary growth rainforest or forest areas containing high levels of biodiversity or protected species. Example: Protected Area closure or new site selection following stakeholder consultation.



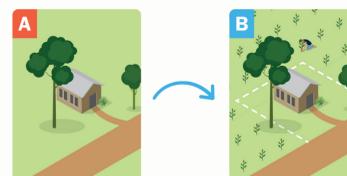
Step 2. MINIMISE

Minimise harm to biodiversity by adhering to best practice growing and extraction practices. Example: limiting the footprint of heavy machinery used to extract and transport palm oil to specific areas.



Step 3. REMEDIATE

Remediate the biodiversity loss within the oil palm site. Example: replanting cleared areas of forest following road infrastructure development.



Step 4. OFFSET

Residual additional damage caused by the oil palm development through improvement of rainforest elsewhere. Example: Local areas with degraded rain forest is replanted near the development site.

Figure 2: An example of the mitigation hierarchy applied to the oil palm industry in an effort to achieve *No Net Loss* of biodiversity

A FLEXIBLE FRAMEWORK

The mitigation hierarchy is flexible enough to apply to multiple sectors and scales offering the potential for a more standardised framework to manage human impacts to biodiversity.

For example, to support CBD Aichi target 12: "By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained..." we could:

- Set a baseline of biodiversity from which to measure overall achievement, such as biodiversity levels at 2017, based on a specific indicator relevant for species diversity e.g. IUCN Red List for threatened species.
- Then set relevant targets and indicators for broad categories of conservation action (i.e. avoid, minimise, remediate, offset) at global, national and local scales.



By 2020 make all Alliance for Zero Extinction sites no-go for all economic development activities.



By 2020 ensure that all species listed on Threatened Red List categories are either exempt from exploitation or sustainably harvested to enable them to maintain or improve their Red List status.



By 2020 restore priority habitat for Critically Endangered Species such that habitat is adequate to allow all Critically Endangered Species to recover to the threat category *Least Concern*.



Beyond 2017, any continued decline in a Red List species' status will be balanced in one part of their range by improvements in another, until the global target is achieved.

Figure 3. An example of species-based conservation goals set at the global scale for each step of the mitigation hierarchy

CONCLUSIONS

Currently how we account for anthropogenic impact to biodiversity is patchy. We have global biodiversity conservation goals and targets that, overall, are failing to achieve desired outcomes².

The mitigation hierarchy is a flexible framework that helps manage the needs of many users of nature. It has potential to be applied to all sectors that impact biodiversity.

The framework forces us to consider:

- What baseline for biodiversity we want?
- How much damage could be averted or minimised, given the current state of biodiversity?
- What does this imply for the requirement for uncertain restoration and offsetting?