THE CONSERVATION HIERARCHY

Underpinning the Post-2020 Biodiversity Framework

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Executive Summary

The conservation hierarchy draws from the well-established mitigation hierarchy approach to structure biodiversity targets, clearly illustrating how they collectively contribute to an overarching vision for nature. This approach is flexible; any action or target, such as protected area targets, or species-orientated targets, can be readily incorporated and set within a wider vision for nature. Multiple biodiversity targets can be arranged under headline goals, such as zero extinction of known species. The mitigation hierarchy is currently international best practice in the reactive management of environmental impacts; the conservation hierarchy would additionally allow for the proactive consideration of conservation actions, such as protected area expansion or habitat restoration. It is also inherently scalable and can be applied at national, local, sectoral, project and individual levels to translate international goals into locally relevant targets. Applying the same framework at multiple levels has the potential to streamline the reporting process, reduce the bureaucratic load and facilitate communication. Many nations already use the mitigation hierarchy to manage and report environmental impacts. This language is therefore already familiar to a wide range of organisations and sectors. In addition, its simplicity lends itself to a public facing campaign comparable to “reduce, reuse, recycle”. Finally, this approach would allow for the enormous range of efforts made by the international community to be globally tracked within a single framework, allowing the collective progress towards a global vision for nature to be calculated.

Turning the tables

The mitigation hierarchy is usually applied at a project or landscape level to structure decisions about how the impacts of proposed activities on biodiversity and the environment might be mitigated. The hierarchy involves the steps of: 1) avoidance, 2) minimisation, and 3) remediation on-site, and then if any residual impacts remain after the implementation of the first three steps, 4) biodiversity offsetting off-site. The steps are sequenced in order of preference from an environmental perspective; avoiding impact is far more reliable and desirable than trying to restore damaged or degraded habitats later. This can be readily scaled up and applied to large projects or entire sectors. For example, a government transport department might apply the hierarchy to a regional expansion of existing road networks. Working through the stages at a landscape level would allow for impacts to be considered in a more holistic manner, potentially leading to improved mitigation and better environmental outcomes. The conservation hierarchy takes advantage of this scalable and flexible approach but turns the application on its head; rather than reactively considering impacts to proposed development activities, we suggest proactively identifying where and how impacts should be mitigated. This would mean working at a landscape level to systematically consider where mitigation should occur.

The mitigation hierarchy brings with it some conceptual strengths. It is often used in practice at a project level to achieve No Net Loss (NNL) or Net Gain (NG) of biodiversity against a baseline. This means that the different activities that fall within each stage must between them collectively compensate for all impacts, and in the case of NG leave the environment in a better state. This ability to help combine and sum seemingly disparate activities to deliver a quantitatively defined headline goal would provide a clear contribution to the Convention on Biological Diversity (CBD) Post-2020 Biodiversity Framework.

	The Reactive Impact Mitigation Hierarchy	**The Proactive Conservation Hierarchy**
Avoid	Retain woodland patches on project site	Identify areas for protected area expansion
Minimise	Reduce pollutant runoff	Collectively manage polluters to prevent habitat degredation
Restore	Regenerate habitat impacted during construction	Actively restore degraded habitat areas
Offset	Restore and protect habitat offsite	Fund conservation activities in other nations

Figure 1. Examples showing that where the mitigation hierarchy considers impacts reactively, the conservation hierarchy considers them proactively.

Unifying international target setting under headline goals

There is a clear need for a global rallying point for biodiversity comparable to the United Nations Framework Convention on Climate Change 1.5 degree target. One major barrier to achieving this is the lack of fungibility of biodiversity and ecosystem services. Nevertheless, the conservation hierarchy inherently coalesces targets under headline goals. The Beijing targets could be structured within themes such as species, ecosystems and genes. Each of these themes could have clear headline goals, for example “Zero extinction of known species”. The collective contribution of the targets can then be summed, clearly indicating how and when they will communally achieve the goals. Nations can then use the conservation hierarchy to set their own targets and pledge actions. This approach can then be replicated to nest regional, sectors or organisational targets within the national targets. This would then provide globally consistent targets with clear connections between scales.

Structuring the target setting within the conservation hierarchy will also highlight whether there is a bias towards certain stages, for example whilst the avoid stage is the most reliable, it is also often neglected, leading to lower certainty and higher risk. There may be a desire to reduce the opportunity costs incurred through conservation action and so focus on easier, rather than better actions. The conservation hierarchy inherently promotes transparency by making such biases clear and inherently guides actors in addressing them.

A ubiquitously applied approach

One of the most useful properties of the conservation hierarchy is that it can be applied to any context at any level. It is also inherently scalable; it can be applied at any level, with each layer of resolution nesting within those above it. It is also extremely flexible; the impact mitigation hierarchy is currently applied across the world a wide breadth of contexts and the conservation hierarchy retains this adaptability.

Applying the same framework across all levels has the potential act as a unifying force, conservation strategies could be readily shared, connected and communicated between different nations, stakeholders, contexts and strata. This universal language would greatly streamline planning, implementation and reporting. By providing a shared paradigm which inherently connects a range of activities to deliver headline goals, it would make it easier for national level actors to collate regional level activities and report progress to the international community.

This approach also inherently indicates how different types of conservation action collectively contribute towards shared goals. A country like Papua New Guinea may focus largely on the avoid stage of the hierarchy and seek to protect existing resources. Contrastingly, The United Kingdom may concentrate on minimising impacts and restoring habitats. Where previously these two countries may have appeared to have quite different approaches to conservation, this paradigm clearly demonstrates how these important contributions strive for a shared goal.

International level

At the international level the conservation hierarchy can be used to set targets. Numbers within the categories correspond to current Aichi Targets

	Zero extinction of species	Protection of ecosystems	Preservation of genetic diversity
Avoid	12	2 5 9 11 14 15	13
Minimise	6	2 3 4 5 7 8 9 10	13
Restore	12	14 15	

Cross cutting principles	Targets 1 16 17 18 19 and 20

National level

At the national level this approach can be used to set targets as well providing a structure that connects conservation action.

	Zero extinction of species	Protection of ecosystems	Preservation of genetic diversity
Avoid	Protect key breeding sites	Protected area expansion	Protect high diversity populations
Minimise	Tackle IWT	Control pollution	Informed species management
Restore	Reintroduction programs	Wildlife corridor restoration	Introduce new genetic stock
Offset	Fund species conservation internationally	Fund habitat conservation internationally	Conserve international diverse populations

Project level

At the project level the hierarchy can be used to report on positive conservation action. This could incorporate actions by any organisation.

	Zero extinction of species	Protection of ecosystems	Preservation of genetic diversity
Avoid	Retain wildlife corridors on site	Retain rare habitat types on site	Avoid hunting diverse population
Minimise	Prevent poaching on site	Reduce pollutant runoff	Scientifically informed herd management
Restore	Feeding programs	Alien species eradication	Introduce genetically novel stock
Offset	Donate to species protection	Biodiversity offset	Exsitu conservation of diverse populations

Figure 2. The conservation hierarchy can be readily applied to set targets and guide action at multiple levels.

Relevance to specific audiences

GOVERNMENTS

For governments this approach would simplify target setting, progress tracking and reporting at a range of scales. It would allow a direct linkage of actions at the local level right up to international agreements and conventions. This framework would readily integrate with the UN's Sustainable Development Goals (SDGs) and existing no net loss policies. It would also facilitate cooperation with neighbouring nations by providing a common conservation language.

NGOs

This paradigm would structure the wide breadth of conservation action within a single framework. By clearly highlighting the links between seemingly disparate actions, this would make the interconnected nature of the conservation community clear. By providing a unifying message for public engagement which still allows for the individuality of organisations to be expressed, this could provide a powerful vehicle for public engagement.

BUSINESSES

Businesses have repeatedly expressed their frustration with the complexity of biodiversity issues. Given the ubiquitous application of the mitigation hierarchy, this represents an understandable framework which can guide their engagement with conservation through a familiar and accessible language. In addition, private entities could report on their voluntary contributions in a more systematic way, allowing them to receive public recognition for their actions. Finally, this would allow organisations to sum their positive contributions and negative impacts, laying the foundations for a future where businesses can aim to achieve no net loss at an organisational level.

THE PUBLIC

The approach also has the potential for traction with the general public. Below is an example of how the stages of the hierarchy might be translated into an easily digestible public facing campaign. The simplicity of the core concepts would allow individuals to apply these principles to their daily lives, replicating the success of "reduce, reuse, recycle" campaigns. By providing a clear connection between the consequences of consumer choice and the Post-2020 Biodiversity Framework, this could be used to raise awareness of the CBD vision for 2050. The identification of action points relevant at the individual level could be used to foster empowerment and generate public support.

Examples of current usage

This approach is already being used in many contexts, albeit rarely explicitly. Landscape level planning approaches have been underpinned by mitigation hierarchy concepts both by NGOs, such as The Nature Conservancy, and by nations, such as South Africa. The hierarchy has also been applied to manage ongoing impacts, such as fisheries, and to manage impacts on specific species, such as greater crested newts in the UK.