

## Introduction to WCS

The Wildlife Conservation Society (WCS) is an international non-governmental organization (NGO) that has been working across the globe for more than 120 years to save wildlife and wild places. We have conservation programs on the ground in more than 60 countries across Asia, Africa, the Pacific, and the Americas that work in partnership with governments, indigenous peoples and local communities, the private sector, and other stakeholders on science-based conservation efforts.

## Recommendations to Parties on the Zero Draft:

*Note: These recommendations also include information that is directly relevant to Notifications [2019-108](#) on "possible targets, indicators and baselines related to the drivers of biodiversity loss as well as on species conservation and the mainstreaming of biodiversity across sectors," as well as Notification [2019-115](#) on "possible targets and indicators...related to the interlinkages and interdependencies between biodiversity and climate change."*

### Overall impressions

WCS commends the Co-Chairs of the Open-Ended Working Group (OEWG) on the Post-2020 Global Biodiversity Framework (GBF), the Secretariat of the CBD and other stakeholders for providing this comprehensive and thoughtful zero draft of the post-2020 GBF. We believe that this already represents a significant improvement in both structure and substance from previous outlines, and is also an improvement on the 2010-2020 Aichi Biodiversity Targets. Our recommendations in this position statement are designed to help refine the structure of its elements and provide technical inputs on the substantive content.

WCS commends the development of "outcome-oriented goals" and "action-oriented targets," which helps to distinguish these often conflated concepts. The framing or structure (2050 Vision, 2050 and 2030 Goals, 2030 Mission, 2030 Action Targets) is clear, and it is very helpful for stakeholders to see how their actions fit within a bigger picture and longer timeframe. We also welcome the ambition and theory of change included in the Introduction; the narrative accurately describes the urgency, ambition, and the *scale* of change that is required to achieve our global goals on biodiversity.

We appreciate the reference to the "full and effective participation of indigenous peoples and local communities in the implementation of this framework" in paragraph 7 of the introduction to the draft framework, but we encourage the framework to also welcome or call for indigenous-led conservation. WCS has undertaken extensive research that demonstrates the importance and the effectiveness of indigenous-led conservation and management of ecosystems and biodiversity (for forests, see [Fa et al. 2019](#) and [WCS 2018](#)). We believe the role for indigenous peoples as currently presented is too narrow.

We also note that the post-2020 framework must be a global framework, in line with Rio Principle 7, the uneven distribution of biodiversity, and the reality that ecological processes do not occur exclusively within political boundaries. We urge Parties to set goals or targets that can be applied at appropriate scales, but also recognize the need for far more international cooperation. This includes the consideration of impacts of actions taken by national governments and other

stakeholders in other countries (e.g. investment, trade and development assistance) as well as in areas beyond national jurisdictions.

International cooperation and target-setting are also needed in the area of resource mobilization to ensure financing is directed to where it is most needed, as low income countries often harbor the highest levels of biodiversity. For countries whose footprint (e.g. investments, consumption, business activities, technical and financial assistance) extend beyond their borders, we encourage implementation and reporting on these goals and targets to consider those activities in addition to activities within a country's own borders. This can be linked to and will support national implementation of SDG target 12 on sustainable consumption and production.

### **Goals for 2030 and 2050 (Section B)**

WCS strongly supports these overarching, outcome-oriented SMART goals for 2030 and 2050, which we believe address the Convention's three objectives and provide a strong foundation for global reviews of progress by SBSTTA. We urge the OEWG Co-Chairs and Parties to maintain the measurability and effectiveness of these goals through identification of appropriate baselines, ensuring that numeric values are based on science and not political concerns, and avoid the risk of perverse incentives that could be created by seemingly SMART targets if they aim to *only* address what can be easily measured (processes versus outcomes).

- **Paragraph 10(a) on a goal for ecosystems:**

We commend the inclusion of an ecosystem goal as proposed in paragraph 10(a), which is a critical component of a post-2020 GBF. This ecosystem goal (along with the other 2030/2050 goals) provides a strong overarching framework for implementation of action-oriented targets in Section D. Actions should be taken at appropriate scales in order to achieve the 2030/2050 goals at national, regional and global levels. We strongly support the proposed inclusion of both *area* (extent) and *integrity* (completeness of, quality and function, including connectivity) of ecosystems, and urge Parties to further refine (and add to) the indicators for measuring these critical concepts across different ecosystem types. We provide more detailed comments on indicators in **Annex 1** of this document. A FAQ document on ecosystem integrity will also be made available prior to OEWG-2.

WCS strongly supports retaining those ecosystems that are important for biodiversity and those with high ecological integrity (often one in the same), and note that this prioritization is reflected in the first 2030 Action Target, in paragraph 12(a)(1), which refers to “retaining existing intact areas and wilderness.” Indeed, we would urge a 2030 goal of ‘no loss’ in these ecosystems be reflected in the 2030/2050 ecosystem goal. A given Party might not have large, high integrity ecosystems within its borders, but could help deliver on this target in two ways: 1) by retaining and restoring those *relatively* important or high integrity ecosystems within its borders; and, 2) by ensuring that its footprint in other countries delivers on retention of ecosystem integrity (e.g. through financial assistance, investments, trade). WCS would be supportive of sub-targets, similar those sub-targets proposed in the goal below in paragraph 10(d)(i-iv), that address specific ecosystem types or biomes, particularly those that provide significant value for biodiversity and/or benefits for people. These could include, for example, coral reefs, forests and others. These would likely be identified by Parties who are already working through international initiatives to conserve those ecosystems.

We also support the proposed use of the term “net” with respect to the 2030/2050 goal on

area *and* integrity of ecosystems, and we suggest using the term “net gain” instead of percentage increases. However, we urge Parties to ensure that this framework does not encourage achievement of net gain by allowing the unlimited reduction of area and integrity in an ecosystem compensated by a commitment to restore other areas. Where losses are to be compensated by gains elsewhere, those losses should be as limited as possible, and should avoid the most critical areas altogether. An appropriate framework for achieving this is the conservation/mitigation hierarchy, including defined “no-go” areas. We recognize that there is a critical need to reflect on the tools available to measure and monitor trends in the area and integrity of different ecosystem types, and at different scales. We urge further reflection by the Parties and scientific community, including at SBSTTA-24, on how to monitor progress towards this goal, as well as the percentage increase (or “net gain”) that would be required by 2050.

Finally, we note an inconsistency between this goal for ecosystems and the first action-oriented target (paragraph 12(a)(1)). The ecosystem goal in paragraph 10(a) calls for “**No net loss by 2030 in area and integrity of freshwater, marine and terrestrial ecosystems, and increases of at least [20%] by 2050.**” The first action target (paragraph 12(a)(1)) calls for Parties to “*Retain and restore freshwater, marine and terrestrial ecosystems, increasing by at least [50%] the land and sea area under comprehensive spatial planning addressing land/sea use change, **achieving by 2030 a net increase in area, connectivity and integrity and retaining existing intact areas and wilderness.***” In other words, the 2030 goal for ecosystems calls for “no net loss” of area and integrity by 2030, while Action Target 1 calls for “a net increase” or “net gain” in area, integrity and connectivity. While these are not strictly mutually exclusive, there needs to be clear alignment between the goal and target. We therefore urge Parties to set a consistent goal for a “net gain” of area and integrity of ecosystems by 2030.

To address the concerns highlighted above, we propose the following amendments to paragraph 10(a). Edits are in blue; insertions are underlined and deletions in strikethrough.

*By 2030, achieve net gain ~~No net loss by 2030~~ in the area and integrity of all natural freshwater, marine and terrestrial ecosystems against a 2020 baseline, and no loss in ecosystems with high importance for biodiversity or high ecological integrity, and by 2050 achieve net gain in all natural ecosystems ~~increases~~ of at least [20%] ~~by 2050,~~ ensuring ecosystem resilience.*

*Clean version: By 2030, achieve net gain in the area and integrity of all natural freshwater, marine and terrestrial ecosystems against a 2020 baseline, and no loss in ecosystems with high importance for biodiversity or high ecological integrity, and by 2050 achieve net gain in all natural ecosystems of at least [20%].*

- **Paragraph 10(b) on a goal for species:**

We note with concern that this formulation could end up being far less ambitious than the existing Aichi Target 12 on species. We urge Parties to renew the commitment to halt species extinction by 2030 (so a reduction of 100% in the first set of brackets). We think a rate-based target is not suitable (as it can be easily manipulated), and would prefer a state-based outcome. The state-based outcome should cover the full components of threatened species, and not be presented as an average. The target should clearly note the issues around data deficient species that are not being accounted for.

We commend the fact that the target now includes a focus on keeping common species common but we also note that the term “abundance of species” is not correct; we believe the intent is to refer to population abundance (and not the number of species); a goal of an average increase in species’ populations is laudable. It is also important that the proposed goals for increases in population abundance be clearly articulated to not apply to invasive species and they avoid giving credit for other perverse outcomes such as increased abundance of species at lower trophic levels following over-harvest at higher trophic levels (e.g. following over-fishing of piscivores).

There are also difficulties with a goal of a percentage of species that are threatened with extinction; that should probably be within taxa (at least at the taxonomic level of class or order). Also, many species are classified by the IUCN Red List of Threatened Species as “data deficient,” or have outdated classifications or have not been classified at all; many of those may be classified as threatened, and an increase in numbers or percentages of threatened species may result from more precise Red List classifications, rather than a worsening of conservation status.

We also note that there are very few action targets (in Section D) related to species conservation, which could include specific actions such as strengthening national legal and policy frameworks for species and ecosystem protection and recovery, captive breeding/reintroduction, habitat manipulation, disease control, etc. We urge Parties to consider any key action-oriented targets under paragraph 12 below that may be needed to achieve this goal. This could take the form of sub-goals, or additions to the action-oriented targets.

To address the concerns highlighted above, we propose the following formulation for the species goal in paragraph 10(b). We comment on indicators in **Annex I**.

*By 2030, no species are threatened with extinction, and native species populations are no longer declining. By 2050, populations of all species are viable, and exhibiting the full range of their ecological interactions, functions, and other roles in the ecosystem, and occur in a representative set of ecosystems and communities throughout their range.*

- **Paragraph 10(d) on a goal for nature’s benefits to people:**

We note that some of the sub-targets included in paragraphs 10(d)(i-iv) are broad, and do not specifically refer to nature’s contributions to those goals. We believe they are appropriate in principle, but may need to be further refined to address how biodiversity and nature can contribute to existing goals, including within the SDGs, on water and food security, disaster risk reduction, and so on.

On sub-paragraph 10(d)(iv) we note that recent published scientific research suggests that nature based solutions could deliver 30% or more of mitigation action needed by 2030, as reflected here, but that the same study projects a lower percentage during 2030-2050 (as fossil fuel abatement increasingly comes to dominate the action being taken), so the numerical target should be adjusted accordingly. Further, we note that Parties could achieve this percentage-based target partly by limiting fossil fuel reduction efforts, a perverse outcome, which means it would be advisable to set this target in terms of absolute emissions reductions and additional sequestration to be delivered by nature, quantified in tonnes of carbon dioxide equivalent.

Furthermore, we urge the addition of “and existing sinks into natural systems maintained” to the end of the proposed goal/sub-goal, because intact natural terrestrial sinks already deliver around 11 GtCO<sub>2</sub> equivalent of sequestration, counteracting more than one quarter of all anthropogenic emissions from all sectors, and this service is at risk through declines in ecological integrity of natural systems. We also recommend clarification of the word “effort.”

Finally, we note that efforts to mitigate or adapt to climate change are not just for the benefit of people; many species and ecosystems are threatened by climate change and there is great interest in aligning the international agendas for biodiversity and climate change. We note that paragraph 10(d)(iv) could be its own goal.

- **Paragraph 10(e) on a goal for equitable sharing of benefits:**

We note that the types of benefits included here are not specified in the target, which may require further detail.

### **Action Targets for 2030 (Section D)**

In this section, we address a subset of the Action Targets for 2030, contained in paragraphs 12 of the zero draft, where we can provide particular expertise and insight to Parties.

- **Paragraph 12(a)(1) on a target for spatial planning and ecosystems:**

We greatly appreciate the inclusion of both an ecosystem goal as proposed in paragraph 10(a), and this action-oriented target on ecosystems, which is directly related to the 2030/2050 goal, addresses land and sea use change, and is in some ways a successor to Aichi Target 5 on habitat degradation, fragmentation and loss.

As with the ecosystem goal, we strongly support and encourage adoption of the reference to both *area* (extent) and *integrity* (completeness of, quality and function, including connectivity) of ecosystems, and urge Parties to further refine (and add to) the indicators and tools for measuring both of these critical concepts across different biomes and ecosystem types. We provide more detailed comments on indicators in **Annex 1** of this document. A FAQ document on ecosystem integrity will also be made available prior to OEWG-2.

We suggest increasing the bracketed percentage describing the increase in areas under comprehensive spatial planning, and we urge Parties to adopt language that ensures that as much of land and sea as possible is incorporated into comprehensive, multi-sectoral and biodiversity-inclusive spatial planning processes. However, we note that “comprehensive spatial planning”, which can be seen as a tool, could be moved to the “Tools and Solutions” section.

We note an inconsistency between the 2030/2050 goal for ecosystems (paragraph 10(a)) and this action-oriented target. The goal in paragraph 10(a) calls for “**No net loss by 2030 in area and integrity of freshwater, marine and terrestrial ecosystems, and increases of at least [20%] by 2050**”; whereas this target (paragraph 12(a)(1)) requires Parties to “**Retain and restore freshwater, marine and terrestrial ecosystems, increasing by at least [50%] the land and sea area under comprehensive spatial planning addressing land/sea use change, achieving by 2030 a net increase in area, connectivity and integrity and retaining existing intact areas and wilderness.**” In other words, the 2030 goal for ecosystems

calls for “no net loss” of area and integrity by 2030, while the target calls for “a net increase” in area, integrity and connectivity. While these are not strictly mutually exclusive, there needs to be clear alignment between the goal and target. We therefore urge Parties to set a consistent goal for a net increase (or “net gain”) of area and integrity of ecosystems by 2030.

We note that “wilderness” as defined in many peer-reviewed studies does not exclude, for example, Indigenous Peoples or their activities. However, we recognize concerns with the term and prefer the phrases “large intact areas” or “large areas of high ecological integrity,” rather than using the word “wilderness” (in many contexts). Furthermore, the concept of intact areas, or areas with a high degree of ecological integrity, is relevant across multiple biomes, while *wilderness* tends not to be used in a marine context.

To address the concerns highlighted above, we propose the following amendments to paragraph 12(a)(1). Edits are in blue; insertions are underlined and deletions in strikethrough.

Ensure that 100% of land and sea areas are under comprehensive, multi-sectoral and biodiversity-inclusive spatial plans and policies that prioritize the retention and restoration of existing ~~Retain and restore freshwater, marine and terrestrial ecosystems~~ with high ecological integrity, increasing by at least [50%] the land and sea area under comprehensive spatial planning addressing land/sea use change, achieving by 2030 a net increase a net gain in area, connectivity and integrity of all natural ecosystems and no loss of areas with high ecological integrity. ~~and retaining existing intact areas and wilderness.~~

*Clean version: Ensure that 100% of land, sea and freshwater areas are under comprehensive, multi-sectoral and biodiversity-inclusive spatial plans and policies that prioritize the retention and restoration of existing ecosystems with high ecological integrity, achieving by 2030 a net gain in area and integrity of all natural ecosystems and no loss of areas with high integrity.*

- **Paragraph 12(a)(2) on a target for protecting sites of particular importance for biodiversity:**

We strongly support setting this target, which is in many ways an improved successor to Aichi Target 11 on area-based conservation measures. We particularly support inclusion of the term “sites of particular importance for biodiversity,” as there have been concerns related to reporting against Aichi Target 11 that many countries have established protected areas in sites that are not as important for the persistence of biodiversity as others. This term facilitates prioritization of establishment of protected areas and OECMs in sites that are important for biodiversity (that is, based on quality, not only quantity/area).

We note that the use of the term “protect,” and then the percentage offered for strict protection, may result in some confusion about the standards and thresholds for meeting these different criteria. We believe there should be clarity around these issues, based on the best available scientific information.

We also note that this target may encounter some of the same issues as previous area-based conservation measures with percentage targets. In particular, WCS recommends that Parties set a target to cover 100% of the sites of particular importance with context-appropriate area-based tools (protected areas, OECMs, etc.). WCS notes that scientific

research ([Woodley et al. 2019](#); [O’Leary et al. 2016](#); Jones et al. in review) provides a basis for increased ambition on area-based targets.

We note with concern that critical language from Aichi Target 11 on effective management does not appear in this action target. While we understand the effective implementation of all targets is critical, there is a strong evidence base that monitoring only the designation of area-based measures can provide misleading information on progress, and measuring and ensuring the effectiveness of protected areas and OECMs is as important as their establishment. We further note that efforts are underway to assess implementation shortfalls for area-based conservation measures, and to introduce systematic and rigorous assessment. However, we also note that the desired outcomes are ecological and sociological, rather than merely indicators of process, and we should set a target accordingly. We therefore urge Parties to reinsert a phrase that could help address this.

To address the concerns highlighted above, we propose the following amendments to paragraph 12(a)(2). Edits are in blue; insertions are underlined and deletions in strikethrough.

*Effectively protect and monitor all sites of particular importance for biodiversity through protected areas and other effective area-based conservation measures, by 2030 covering at least ~~[60%]~~ 100% of such sites and at least [30%] of land and sea areas by 2030. with at least ~~[10%]~~ under strict protection.*

*Clean: Effectively protect and monitor all sites of particular importance for biodiversity through protected areas and other effective area-based conservation measures, covering at least 30% of land and sea areas by 2030.*

- **Paragraph 12(a)(4) on a target for reducing pollution:**

We support the inclusion of this target, but urge Parties explicitly include within this target, or otherwise prioritize in a post-2020 programme of work, increasing cooperation on dealing with pollutants that are not mentioned here, including marine debris (beyond just plastics) and marine noise pollution.

On marine noise pollution, WCS was pleased to participate actively in the 19th meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP-19), which focused on "Anthropogenic underwater noise." We would encourage substantive, focused discussion of anthropogenic underwater noise as a key marine pollutant under this target, as well as intersessional work on the complex nature of global targets, indicators and baselines for ocean noise.

Finally, we encourage Parties to establish baselines for reductions. We would propose adding, "from 2020 baselines" to the end of this target.

- **Paragraph 12(a)(5) on a target for harvesting, trade and use of wild species:**

We support the inclusion of this target, which fills a critical gap in the existing Strategic Plan for Biodiversity and Aichi Targets, and would bring the GBF into greater alignment with the SDGs.

We note with concern that the target itself is quite vague as worded, and would benefit from further elaboration. The framework should be clear that the target is to combat illegal take

and use of wild species (animals and plants; marine and terrestrial), and to ensure that any such take and trade are sustainable (rather than to promote trade). It also should be clarified that this refers to both domestic use and trade, as well as international trade. Liaison with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is important, as well as with the Convention on Migratory Species of Wild Animals (CMS), and the indicators should reflect the indicators of both conventions.

- **Paragraph 12(a)(6) on a target for nature-based solutions to climate change:**

It is widely recognized that nature-based solutions (NBS) can provide 30% of the solution to climate mitigation to meet the Paris climate goals, and we very much support the inclusion of this action target for its potential co-benefits for climate, biodiversity and people.

As with the 2030/2050 goal on nature’s benefits to people in paragraph 10(d), WCS supports creating a target measured in tons of carbon dioxide equivalent that is equivalent to the 30% of global climate mitigation needed to reach the Paris goals, so that progress towards it can be more easily measurable

Furthermore, noting the comment above about the need to address the reduction in fossil fuels, we urge the addition of the phrase, “relating to other sectors” after “complementing stringent emissions reductions.”

In order to ensure that negative impacts on biodiversity and food security are avoided, the definition of NBS being developed by IUCN should be explicitly referred to in the target. According to [the IUCN definition](#), NBS should by their very definition, have positive impacts on biodiversity. To create a new positive target for biodiversity under the CBD, we recommend that the wording ‘avoiding negative impacts on biodiversity and food security’ is changed to “maximizing positive benefits for biodiversity and food security, for example, through maintaining high integrity or highly intact ecosystems.”

- **Paragraph 12(b)(7) on a target for the sustainable use of wild species:**

We realize that the language used in this target -- “Enhance the sustainable use of wild species,” is generally in line with the objectives of the Convention. However, we note that the indicators could lead to reporting on efforts to simply maximize offtake of wild species, which should not be the case. We therefore urge careful negotiation of this target on sustainable use, recognizing that some offtake may need to be reduced in order to ensure sustainability and benefits for those who depend on it most.

We also believe that a target on reducing human/wildlife conflict is laudable, but if a species is extirpated from an area, conflict with that species would go to zero; therefore, this should be clarified and indices adjusted accordingly, such that human/wildlife conflict should be reduced in concert with increases in area-based conservation measures and enhanced species population status.

- **Paragraph 12(b)(9) on a target for nature-based solutions:**

We note that nature-based solutions, especially retaining and restoring ecosystem integrity, should confer other benefits to people besides water provision, like health, culture and other ecosystem services.

- **Paragraph 12(b)(12) on a target for biodiversity in agricultural and other managed**

**systems:**

Noting that this is less about the “sustainable **use** of biodiversity in agricultural and other managed ecosystems” (emphasis added), but rather the presence and contributions of biodiversity to these systems, we propose that the above phrase be replaced with “contribution of biodiversity to agricultural and other managed ecosystems.”

- **Paragraph 12(c)(13) on a target for biodiversity mainstreaming:**

We commend the inclusion of this target, and note that biodiversity-inclusive environmental impact assessments and strategic environmental assessments are critical tools to mitigate the impacts of development on biodiversity. However, we note that the mitigation hierarchy (avoid, minimize, restore, offset) is not reflected here and should be. This widely recognized hierarchy sets out key actions for Parties and stakeholders to take while engaging in planning processes. We note that this is also relevant to the first Action Target (paragraph 12(a)(1)) on spatial plans and retention and restoration of intact ecosystems, and recommend consideration of moving spatial planning to this target.

- **Paragraph 12(c)(14) on a target for economic sectors:**

We strongly support the inclusion of this target, and again urge Parties to set goals or targets that can be applied at appropriate scales, including the need for international cooperation. This idea extends to consideration of the impacts taken by national governments and other stakeholders in other countries (including investment, trade and aid policies) and areas beyond national jurisdiction.

Furthermore, we urge Parties to ensure that there is greater enforcement of State and non-State actors who knowingly violate laws or regulations designed to protect biodiversity, including species and ecosystems.

- **Paragraph 12(c)(17) on a target for sustainable production and consumption:**

We note with concern that this target is quite broad and may not be actionable for Parties and other stakeholders.

- **Paragraph 12(c)(19) on a target for participation of stakeholders:**

As mentioned above as an overarching comment we encourage the framework to welcome or call for indigenous-*led* conservation.

### **Implementation and Support Mechanisms (Section E)**

In this section, we address a subset of the issues discussed under implementation and support mechanisms, contained in paragraph 13 of the zero draft.

- **Paragraph 13(a) on increasing resources from all sources for implementation:**

WCS supports shared goals set for resource mobilization that are SMART, tailored to the ambition and scope of new conservation targets, and have mechanisms for accountability.

Goals on resource mobilization need to be viewed against other finance flows relevant to biodiversity, which includes harmful or perverse subsidies to productive or extractive sectors or other perverse economic incentives. Increasing ODA can only be one part of the

picture.

Related to these issues, WCS would like to make a critical point: **It is more cost effective to maintain and conserve ecosystems than it is to restore them.** Conservation/protection and restoration are both part of the solution, but in terms of cost effectiveness, conservation is more cost effective, and has a more efficient delivery of benefits for ecosystem services (including, notably, carbon) and biodiversity conservation, as well as for the benefit of indigenous peoples and local communities.

**Enabling Conditions (Section E)**

- **Paragraph 14(a) indigenous peoples and local communities:**

As mentioned several times, WCS recommends that Parties encourage indigenous-led conservation approaches, which have been demonstrated to result in ecological outcomes. We believe the framework should include appropriate amendments to welcome indigenous-led conservation, rather than just participation.

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## Annex 1. Suggested indicators for ecosystem goals and targets

Note: This builds on the preliminary draft monitoring framework presented as an annex to the zero draft. WCS comments are in blue.

A	B	C
<p><b>Draft 2050 <span style="background-color: yellow;">Goals</span></b></p>	<p><b>Suggested elements of the goals for monitoring</b></p>	<p><b>WCS Suggestions on Indicators</b></p>
<p>No net loss by 2030 in the area and integrity of freshwater, marine and terrestrial ecosystems, and increases of at least [20%] by 2050, ensuring ecosystem resilience.</p> <p><i>Proposed version: “By 2030, achieve net gain in the area and integrity of all natural freshwater, marine and terrestrial ecosystems against a 2020 baseline, and no loss in ecosystems with high importance for biodiversity or high ecological integrity, and by 2050 achieve net gain in all natural ecosystems of at least [20%].”</i></p>	<p>Change, and rate of change, in extent of natural ecosystems and biomes (overall, for each biome/ecosystem type, and for intact areas, e.g. primary forests).</p> <p>Change in ecosystem connectivity and fragmentation.</p>	<ul style="list-style-type: none"> <li>• Note: the <a href="#">IUCN Red List for Ecosystems</a> typology should be used for boundaries of ecosystems and a baseline assessment.</li> <li>• For specific ecosystems/ecosystem-types/biomes, there are more precise ways to measure loss of extent. For example, ‘Forest area as a proportion of total land area’, ‘Wetland Extent Trends Index,’ ‘Continuous Global Mangrove Forest Cover,’ and ‘Live coral cover’ are already included in the list of potential indicators.</li> <li>• We note that the extent of human pressure, and related changes in ecosystem extent) can be now measured across pre-determined ecosystem boundaries. The human pressure mapping efforts are being continually updated, with plans to have them dynamic and in real-time. This can be used as a simple-yet-effective way to broadly get to the loss in area/extent (and integrity, see below) of ecosystems. See, for example, <a href="#">Watson et al. 2016</a>.</li> <li>• We <b>do not believe the species-derived indices (e.g. Species Habitat Index, Biodiversity Habitat Index, etc.) are useful for this goal</b>, because they do not properly assess the component integrity or resilience.</li> </ul> <ul style="list-style-type: none"> <li>• A new, peer-reviewed method is now available to measure changes in connectivity, degradation and fragmentation -- see <a href="#">Beyer et al. 2019</a>. This method can be used across all terrestrial ecosystems and be oriented to address different spatial scales. This provides a critical addition to the list of indicators for connectivity, as well as integrity, resilience and degradation (see below). <b>We therefore recommend that this sub-heading and the following be merged.</b></li> </ul>

A	B	C
Draft 2050 <b>Goals</b>	Suggested elements of the goals for monitoring	WCS Suggestions on Indicators
	Change in ecosystem integrity resilience and degradation and rate of ecosystem restoration.	<ul style="list-style-type: none"> <li>• <b>We recommend that this measure of ecosystem degradation be set in the same heading as change in ecosystem connectivity and fragmentation (directly above).</b> The method found in <a href="#">Beyer et al. 2019</a> can then be used as a measure of loss, fragmentation, connectivity <i>and</i> degradation. An equivalent can be created using the methods associated with the cumulative human impacts on marine ecosystems, which is already proposed as indicator for this goal.</li> <li>• Additionally, there are other types of measurement that can assess the integrity of different type of ecosystems. For example, existing monitoring frameworks for coral reefs capture data on reef fish biomass (see <a href="#">Hicks et al. 2019</a>), structural complexity, hard coral genera richness, and percent cover of key benthic groups, and could refine our understanding of the status of coral reef integrity and function (as well as tie into other goals such as provisioning services and species).</li> </ul>
<p>The percentage of species threatened with extinction are reduced by [X%] and the abundance of species has increased on average by [X%] by 2030 and by [X%] by 2050.</p> <p><i>Proposed version: “By 2030, no species are threatened with extinction, and native species populations are no longer declining. By 2050, populations of all species are viable, and exhibiting the full range of their ecological interactions, functions, and other roles in the ecosystem, and occur in a representative set of ecosystems and communities throughout their range.”</i></p>		<ul style="list-style-type: none"> <li>• <a href="#">IUCN Green List of Species</a> provides a critical addition to the list of species-based metrics, particularly for recovery of species populations to full range of ecological interactions, and can support the proposed re-wording of the goal.</li> <li>• WCS is broadly supportive of the existing proposed indicators for this goal, including the IUCN Red List Index and the Biodiversity Intactness Index. As noted above, we believe species-based indices like the Specie Habitat Index and Biodiversity Habitat Index would be better placed in this category.</li> </ul>

A	B	C
Draft 2050 <b>Targets</b>	Suggested elements of the goals for monitoring	WCS Suggestions on Indicators
<p>(1) Retain and restore freshwater, marine and terrestrial ecosystems, increasing by at least [50%] the land and sea area under comprehensive spatial planning addressing land/sea use change, achieving by 2030 a net increase in area, connectivity and integrity and retaining existing intact areas and wilderness.</p> <p>Proposed version: <i>“Ensure that 100% of land, sea and freshwater areas are under comprehensive, multi-sectoral and biodiversity-inclusive spatial plans and policies that prioritize the retention and restoration of existing ecosystems with high ecological integrity, achieving by 2030 a net gain in area and integrity of all natural ecosystems and no loss of areas with high integrity.”</i></p>	<p>Change in extent and rate of change of natural ecosystems and biomes using human pressure mapping and derived products.</p>	<ul style="list-style-type: none"> <li>Note: the <a href="#">IUCN Red List for Ecosystems</a> typology should be used for boundaries of ecosystems and a baseline assessment.</li> <li>For specific ecosystems/ecosystem-types/biomes, there are more precise ways to measure loss of extent. For example, ‘Forest area as a proportion of total land area’, ‘Wetland Extent Trends Index,’ ‘Continuous Global Mangrove Forest Cover,’ and ‘Live coral cover’ are already included in the list of potential indicators.</li> <li>We note that the extent of human pressure, and related changes in ecosystem extent) can be now measured across pre-determined ecosystem boundaries. The human pressure mapping efforts are being continually updated, with plans to have them dynamic and in real-time. This can be used as a simple-yet-effective way to broadly get to the loss in area/extent (and integrity, see below) of ecosystems. See, for example, <a href="#">Watson et al. 2016</a>.</li> <li><b>We do not believe the species-derived indices (e.g. Species Habitat Index, Biodiversity Habitat Index, etc.) are useful for this goal</b>, because they don’t properly assess the component integrity or resilience.</li> </ul>
	<p>Spatial planning</p>	<ul style="list-style-type: none"> <li>Proportion of land and sea area under spatial planning regimes that adequately integrate biodiversity.</li> </ul>
	<p>Change in ecosystem connectivity.</p>	<ul style="list-style-type: none"> <li>A new, peer-reviewed method is now available to measure changes in connectivity, degradation and fragmentation -- see <a href="#">Beyer et al. 2019</a>. This method can be used across all terrestrial ecosystems and be oriented to address different spatial scales.</li> </ul>
	<p>Change in rate of habitat degradation.</p>	<ul style="list-style-type: none"> <li>Cumulative human impacts on terrestrial and marine ecosystems.</li> </ul>
	<p>Habitat restoration.</p>	<ul style="list-style-type: none"> <li>Area of land restored, by ecosystem* (and resulting benefits)*</li> <li>Global Ecosystem Restoration Index.</li> </ul>
<p>(2) Protect sites of particular importance for biodiversity through protected areas and</p>	<p>Change in extent of protected areas and other area-based conservation measures.</p>	<ul style="list-style-type: none"> <li>Protected area coverage.</li> <li>OECM coverage.</li> </ul>

A	B	C
Draft 2050 <b>Targets</b>	Suggested elements of the goals for monitoring	WCS Suggestions on Indicators
<p>other effective area-based conservation measures, by 2030 covering at least [60%] of such sites and at least [30%] of land and sea areas with at least [10%] under strict protection.</p> <p><i>Proposed version: Effectively protect and monitor all sites of particular importance for biodiversity through protected areas and other effective area-based conservation measures, covering at least 30% of land and sea areas by 2030.</i></p>	<p>Coverage and representativity of protected areas and other area-based conservation measures (ecosystems, and key areas).</p>	<ul style="list-style-type: none"> <li>• <a href="#">Number of countries that have identified and mapped their KBAs using the globally agreed standard.</a></li> <li>• Protected Area and OECM coverage of Key Biodiversity Areas.</li> <li>• <a href="#">Protected area coverage of ecoregions against measures of human pressure so as to prioritize intact ecosystems.</a></li> </ul>
	<p>Connectivity of protected areas.</p>	<ul style="list-style-type: none"> <li>• <a href="#">Protected Area Connectedness Index ('PARC-Connectedness')</a> is good but protected-area focused. The post-2020 framework needs an indicator for connectivity that takes into account the entire landscape and not protected areas only. New tools are becoming available to make these assessments.</li> </ul>
	<p>Protected area management.</p>	<ul style="list-style-type: none"> <li>• <a href="#">Measures of human pressure change inside protected areas against a pre-determined baseline, following the methods in Jones et al. 2018.</a></li> <li>• Protected Areas Management Effectiveness (PAME)</li> <li>• Governance of protected areas and OECMs (public, private, community, IPLC)</li> </ul>