



A post-2020 target on coral reef ecosystems

Policy recommendation from the Wildlife Conservation Society (WCS)



Our conservation challenge and policy opportunity

Although several of the Convention on Biological Diversity (CBD) [Aichi Biodiversity Targets](#) address pressures relevant to coral reef ecosystems, only [Target 10](#) addresses coral reef ecosystems explicitly. Unfortunately, Target 10 was not articulated clearly and suffered from this ambiguity during implementation. In a [2018 assessment](#), Parties agreed that they have not met Aichi Target 10, three years *after* the ambitious five-year deadline, and most indicators used to track coral reefs (such as coral cover) were still trending negative. Parties to the CBD are currently negotiating a successor to the Aichi Targets, for adoption at CBD CoP15 in 2020.

Convention on Biological Diversity. "Updated scientific assessment of progress towards selected Aichi Biodiversity Targets and options to accelerate progress." 2018.

A global target on ecological outcomes for coral reefs

We recommend that Parties focus a post-2020 target on key conservation *outcomes* as they pertain to the health and function of the coral reef ecosystems. This would allow for strategic conservation actions most appropriate to local context. We propose the following wording:

By 2030, Parties are implementing strategic actions, at multiple scales, to maintain the integrity and function of the planet's coral reefs using key metrics of reef health, such as maintaining or increasing live hard coral cover, structural complexity and reef fish biomass against appropriate benchmarks.

An outcome-based target avoids prescriptive policy

Coral reef threats and interventions will be unique to different places, i.e., ridge-to-reef water quality management, strengthening fisheries management or other approaches to resilience-based management that recognizes change, adaptation and transformation. Overly narrow targets (i.e., simple area-based conservation measures or a focus on single threats of pollution or over-fishing) may jeopardize achieving an outcome-based target for coral reefs. We strongly advocate focusing on the core need to increase the function and health of coral reefs, through a target focused on outcomes that provides the necessary flexibility for how countries can achieve it.

McLeod et al. [The future of resilience-based management in coral reef ecosystems](#). *Journal of Environmental Management*, 2019

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Established indicators of coral reef ecosystem integrity

The goal of Aichi Target 10 is to maintain **ecosystem integrity**. This requires addressing ecosystem threats, identifying appropriate interventions and tracking outcomes using relevant indicators. Coral reefs are an exceptionally diverse ecosystem defined by complex social-ecological systems -- no two places are the same. Identifying and addressing key threats (i.e., climate change, overfishing, pollution, habitat destruction) through effective interventions should be led by individual Parties and key stakeholders as appropriate to local context. A *global* target should instead focus on tracking widely applicable indicators for healthy coral reef ecosystems against known thresholds for ecosystem function. We believe this should include coral cover and structural complexity, and reef fish biomass:

- **Live coral cover and structural complexity** maintain reef growth through carbonate production, requiring a minimum of >10% hard coral cover. A precautionary threshold to maintain biodiversity, structural complexity and fisheries production is >20-30% live coral cover. Additional indicators can measure the % cover of framework corals that build large, complex colonies that form the carbonate backbone of the reef. Structural complexity is positively associated with reef fish abundance and diversity. Work is ongoing to identify a globally relevant threshold for structural complexity. Parties must commit to measuring the national status and trends of live coral cover and structural complexity, and enact interventions to mitigate threats and maintain reefs above thresholds by 2030. **Benchmark:** *A recent study of >2,500 reefs in 44 Indo-Pacific countries identified a regional average of 23.7 ± 17.0% live hard coral cover, and 85.7% of reefs dominated by framework corals.*
- **Reef fish biomass** measures the amount of fish on a reef. Evaluating fish biomass is one of the most useful ways to evaluate the ecological and fisheries status of coral reefs. Reefs with >500-600 kg/ha of total reef fish biomass have been found to maintain fisheries productivity, ecosystem function, and biodiversity. **Benchmark:** *A recent study of >1,000 remote and high-compliance closures in 21 Indo-Pacific ecoregions identified an average of 740 kg/ha in closures, and 1870 kg/ha on remote reefs.*

Darling et al. "Social–environmental drivers inform strategic management of coral reefs in the Anthropocene." *Nature Ecology & Evolution*, 2019.

Darling et al. "Relationships between structural complexity, coral traits, and reef fish assemblages." *Coral Reefs*, 2017.

McClanahan et al. "Critical thresholds and tangible targets for ecosystem-based management of coral reef fisheries." *PNAS*, 2011.

McClanahan et al. "Global baselines and benchmarks for fish biomass: comparing remote reefs and fisheries closures." *MEPS*, 2019

The target is ambitious, but measurable and feasible

Measuring live coral cover and reef fish biomass requires standardized training and data entry workflows that have been developed by coral reef scientists over the past few decades. National coral reef monitoring agencies exist in many Parties and can be strengthened to achieve a post-2020 target. WCS stands ready to work with Parties to scale up these monitoring and reporting efforts as part of implementing the post-2020 framework.

WCS is a conservation NGO working in more than 60 countries to save wildlife and wild places, with [marine conservation programs](#) in over 25 countries. We look forward to implementation of any post-2020 targets through long-term management strategies. We urge Parties to champion a post-2020 coral reef target at the following meetings: the post-2020 workshop on marine and coastal biodiversity (11-13 Nov. 2019, Montreal); 34th General Meeting of ICRI (2-7 Dec. 2019, Townsville); and the meetings of the Open-Ended Working Group on the post-2020 framework (24-28 February 2020, Kunming, and 27-31 July 2020 in Cali, Colombia). For more information, please contact Sue Lieberman (slieberman@wcs.org) or Alfred DeGemmis (adegemmis@wcs.org).