



## Ecological integrity: an overview

The interlinked global crises of biodiversity loss, climate change, and threats to human and wildlife health are continuing to accelerate, posing existential threats to biodiversity and human well-being and undermining efforts to implement the Global Biodiversity Framework (GBF). Maintaining and improving ecological integrity—ecosystem structure, function, and composition—is central to addressing all these crises, and the importance of ecological integrity is recognized in the GBF and the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement.

Ecological integrity is a holistic way to conceive of the health of an ecosystem, along a full gradient from highly intact to highly degraded. *Structure* refers to physical characteristics, such as a forest with three-dimensional complexity, or a river with high connectivity. *Function* refers to ecological processes such as fish biomass production or wetland nutrient cycling. *Composition* refers to the presence, abundance or richness of species, populations or genetic units. Areas with high ecological integrity help protect biodiversity, are more resilient to climate change, deliver climate adaptation and mitigation benefits, support Indigenous Peoples and local communities, support cultural values, and provide health benefits to people and wildlife.



In many parts of the world, Indigenous Peoples have safeguarded nature for millennia. Despite Indigenous and non-Indigenous conservation efforts, however, almost two-thirds of the world's terrestrial surface and more than half of the ocean has been degraded or highly modified. Protecting areas with high ecological integrity, restoring those under threat, and safeguarding the land and seascapes managed by Indigenous Peoples and local communities, using human rights-based approaches and paying particular attention to socio-ecological dimensions, will be essential to nature's survival and our collective future.

These efforts would benefit from a clear target and a simple metric for measuring ecological integrity. In line with monitoring frameworks for the GBF and the Paris Agreement, the Wildlife Conservation Society and partners are working to develop robust metrics for Parties to identify, conserve, and restore ecological integrity. Our goal is to complement existing metrics by providing an index of ecological integrity (a “Nature Health Index”) that can be developed quickly and updated over policy-relevant timeframes.

