

# BACKGROUND BRIEF

# NATURE CONSERVATION & SYSTEMS THINKING



This briefing note provides a short overview of agricultural terms. It assumes that the reader is familiar with [MSD](#). It was prepared by Andrew Panton, Senior Consultant at [the Canopy Lab](#), for the [Green Avengers Community of Practice](#). If you would like to join the Green Avengers, please complete this [survey](#).

# Nature Conservation & Systems Thinking

*Why is conserving nature and biodiversity important?*

Alongside the global climate crisis, the world is undergoing a nature crisis. Although it receives less attention, biodiversity loss is occurring at an alarming rate across the planet, with wildlife populations having decreased by an average of 69% since 1970.<sup>1</sup> Biodiversity supports human health and food security, provides protection from natural disasters, and underpins our economic systems. An estimated \$44 trillion of economic value generation – more than half of the world’s total GDP – depends on nature.<sup>2</sup> Renewable natural capital (such as forests, cropland, ocean resources) has been found to form over 23% of total wealth for low-income countries. Depleting these resources for short-term economic growth is undermining future prosperity, as explored in the presentation prepared for the Green Avengers by Flora and Fauna International.<sup>3</sup>

*“Biodiversity is fundamental to human well-being, a healthy planet, and economic prosperity for all people, including for living well in balance and in harmony with Mother Earth. We depend on it for food, medicine, energy, clean air and water, security from natural disasters as well as recreation and cultural inspiration, and it supports all systems of life on Earth.”*

– Kunming-Montreal Global Biodiversity Framework, 2022

## Key concepts and definitions

The table below presents some commonly recognized concepts and definitions.

Term	Definition
Biodiversity	<p>“The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. In other words, biodiversity is the part of nature that is alive, and includes every living thing on Earth.”<sup>4</sup></p> <p>[See also <i>Key Biodiversity Areas</i> under IUCN below.]</p>
Nature	<p>Nature is a wider concept than biodiversity, encompassing “all the existing systems created at the same time as the Earth, all the features, forces and processes, such as the weather, the sea and mountains. In other words, nature is all life on Earth (i.e. biodiversity), together with</p>

<sup>1</sup> WWF (2022). Living Planet Report 2022

<sup>2</sup> World Economic Forum (2020). Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy

<sup>3</sup> World Bank (2021). The Changing Wealth of Nations 2021 (see also related [press release](#))

<sup>4</sup> Convention on Biological Diversity, Article 2

	the geology, water, climate and all other inanimate components that comprise our planet.” <sup>5</sup>
Ecosystem	<p>“A dynamic complex of plant, animal, and microorganism communities and the non-living environment, interacting as a functional unit.”<sup>6</sup></p> <p>Connections between different ecosystems allows for the movement of species and the flow of ecological processes (such as seed dispersal, pollination, genetic diversification) and is crucial for maintaining healthy ecosystems, supporting biodiversity, and enabling species to adapt to environmental changes. (See <i>Habitat</i> below for the related concept of habitat connectivity.)</p>
Ecosystem services	<p>“Ecosystem services are the benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on Earth.”<sup>7</sup></p> <p>In effect, ecosystem services describe the value that ecosystems provide to humans in terms of wealth, nutrition, security of other forms of wellbeing. From an economic perspective, these services are often positive externalities – in that they are not paid for by the actors who benefit from them and undervalued by society at large. There have been various experiments to overcome this problem using “payments to ecosystem services” schemes under which owners or users of areas from which the ecosystem service(s) originate receive cash payments or other in-kind benefits conditional on actions to protect or restore the ecosystem.</p>
Species	The basic scientific unit used to classify living organisms, in a hierarchy from life (all organisms) as a whole down to individual species.
Habitat	“The place or type of site where an organism or population naturally occurs.” <sup>8</sup> The concept of habitat considers a particular area, or type of area, in relation to a species of interest, whereas the concept of an ecosystem includes all the living organisms in a particular area or type of area. The term “habitat connectivity” refers to connections between areas of habitat for a (or multiple) species of interest.
Landscapes	“A socio-ecological system that consists of natural and/or human-modified ecosystems, and which is influenced by distinct ecological, historical, political, economic and cultural processes and activities. The spatial arrangements and governance of a landscape contribute to its unique character. Within a landscape, there can be various land use

<sup>5</sup> <https://www.cbd.int/idb/activities/difference-biodiversity-nature.pdf>

<sup>6</sup> Convention on Biological Diversity, Article 2

<sup>7</sup> World Resources Institute (2005). Millennium Ecosystem Assessment - Ecosystems and Human Well-being: General Synthesis

<sup>8</sup> Convention on Biological Diversity, Article 2

	types, such as agriculture, forestry, biodiversity conservation, and urban areas. The actors managing these land use types have different objectives, e.g. biodiversity conservation, agricultural productivity or livelihood security.” <sup>9</sup>
Natural capital	Natural capital refers to the stock of natural assets, processes and systems that provide ecosystem services. The term “capital” is used to indicate the value of these resources and to contrast it with other forms of capital (e.g., human capital, financial capital, produced capital).
Nature-based solutions	“Actions to protect, conserve, restore, and sustainably use and manage ecosystems in a way that addresses social, economic and environmental challenges while simultaneously benefiting human well-being and biodiversity.” <sup>10</sup> While natural climate solutions (NCS) are focused specifically on climate mitigation, nature-based solutions (NbS) are actions that address broader societal challenges by protecting, sustainably managing, and restoring ecosystems, benefiting both biodiversity and human well-being. <sup>11</sup>
Protected areas	<p>A <i>protected area</i> is “a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.” The IUCN defines six categories of protected area (based on the primary objective for which an area is managed) and four models of protected area governance.<sup>12</sup></p> <p>Certain protected areas or other conserved areas (see below) may also be specially designated sites such as UNESCO World Heritage sites, UNESCO Biospheres, or Ramsar sites (wetlands of international importance).<sup>13</sup></p>
Other effective area-based conservation measures (OECMs)	Often referred to simply as <i>conserved areas</i> , OECMs are sites outside protected areas that deliver effective and long-term conservation of biodiversity. They are not officially designated as protected areas and need not be managed with conservation as the primary objective. If recognised according to the relevant criteria, OECMs can be counted toward the 30 x 30 target (see <i>Convention on Biological Diversity</i> and <i>IUCN</i> below). This encompasses a wide range of sites including private or community-based conserved areas (conservancies), hunting reserves, sacred natural sites with high biodiversity values, flood

<sup>9</sup> Global Canopy (2015). The Little Sustainable Landscapes Book

<sup>10</sup> <https://www.wri.org/insights/what-exactly-are-nature-based-solutions>

<sup>11</sup> <https://www.nature.org/en-us/what-we-do/our-insights/perspectives/ncs-principles/>

<sup>12</sup> IUCN (2008). Guidelines for Applying Protected Area Management Categories. The categories are strict nature reserve (category Ia); wilderness area (Ib); national park (II); natural monument or feature (III); habitat/species management area (IV); protected landscape or seascape (V); protected areas with sustainable use of natural resources (VI). It also defines four ways in which protected areas can be governed: by the national or subnational government, or a delegated organization such as an NGO (Type A); shared governance by multiple governments or other entities (Type B); private governance by individual landowners or organizations (e.g. NGOs, universities, corporations) (Type C); and governance by Indigenous peoples and local communities (Type D).

<sup>13</sup> <https://whc.unesco.org/en/list/>; <https://www.unesco.org/en/mab/map>; <https://rsis.ramsar.org/>

	protection zones and watershed management areas, permanent set-asides in managed forests. <sup>14</sup>
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## Key organizations, frameworks and standards

The table below presents some of the key organizations, frameworks and standards involved or used in nature conservation.

Term	Definition
Convention on Biological Diversity (CBD)	<p>The <u>CBD</u> is a multilateral treaty that provides a global framework for actions to conserve biological diversity, promote the sustainable use of its components, and ensure the fair and equitable sharing of benefits arising from genetic resources. It was established at the Earth Summit in Rio de Janeiro in 1992, together with the UN Framework Convention on Climate Change (UNFCCC) and UN Convention to Combat Desertification (UNCCD).</p> <p>Actions under the CBD are now guided by the <u>Global Biodiversity Framework (GBF)</u>, adopted by 196 countries in 2022, which sets out four overarching goals for 2050, and set of 23 targets to be achieved by 2030. This includes the “30 x 30 target” of conserving 30% of the world’s terrestrial, inland water, coastal, and marine areas by 2030, as well as targets to restore 30% of degraded ecosystems, prevent extinction of threatened species, mobilize \$200 billion per year in biodiversity funding, and phase out or reform harmful subsidies.</p>
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	<p><u>CITES</u> is a multilateral treaty that regulates the international trade in specimens of wild animals and plants through a permit system. Trade in species threatened with extinction (listed in CITES Appendix I) is permitted only in exceptional circumstances, while trade in other species is controlled to ensure it does not endanger their survival (Appendix II), or where the species is only protected from trade in certain member states (Appendix III).</p>
International Union for Conservation of Nature (IUCN)	<p>Founded in 1948, the <u>IUCN</u> (formerly the World Conservation Union) is a global organization that brings together government and civil society organizations (members) from over 160 countries. It plays a significant role in monitoring biodiversity, developing conservation standards and guidelines, and influencing international environmental policies and practices. Some of its key tools and frameworks are:</p> <ul style="list-style-type: none"> <li>• The <u>Global Standard for the Identification of Key Biodiversity Areas</u> (KBA Standard), a methodology for identifying areas that have a global value for conservation, due to their outstanding ecological integrity, globally important ecosystems</li> </ul>

<sup>14</sup> IUCN (2021). Recognising and reporting other effective area-based conservation measures (OECMs)

	<p>or significant populations of animals, fungi and plants. It is intended to “ensure that conservation efforts are focused in the places that matter most.”<sup>15</sup></p> <ul style="list-style-type: none"> <li>• The <u>Red List of Threatened Species</u><sup>TM</sup>, which assesses the extinction risk status of animal, fungus and plant species worldwide, providing critical data to inform conservation actions and policy decisions.</li> <li>• The <u>Green List of Protected and Conserved Areas</u>, a global standard to certify the effective, equitable and sustainable management of protected and conserved areas.</li> </ul>
Open Standards for the Practice of Conservation (Conservation Standards)	Developed by the <u>Conservation Measures Partnership (CMP)</u> , in collaboration with a wide range of conservation practitioners, the <u>Conservation Standards (CS)</u> are a widely adopted, open-source set of principles and practices for conservation project design, management, and monitoring.

## Recommended resources

In addition to those referenced in the footnotes and hyperlinks above, the following resources provide useful information on nature conservation.

### Nature conservation

1. Convention on Biological Diversity, [Global Biodiversity Framework resource hub](#)
2. IUCN [Conservation Tools](#) and [Issues Briefs](#)
3. Global Canopy (2021). [The Little Book of Investing in Nature](#);
4. Global Canopy (2021). [The Little Sustainable Landscapes Book](#)
5. [Key Biodiversity Areas Database](#)
6. [Protected Planet](#) – the World Database on Protected Areas (WDPA)

### Market systems development

1. Fauna & Flora International and Practical Action, [Guidance on applying the participatory market systems approach to nature conservation](#)
2. BEAM Exchange (online knowledge sharing platform)
3. The Springfield Centre (2015). [The Operational Guide for the Making Markets Work for the Poor \(M4P\) Approach](#), 2nd edition funded by SDC & DFID
4. USAID Feed the Future Market Systems and Partnerships Activity – [Resources page](#)

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<sup>15</sup> KBAs are defined as “sites contributing significantly to the global persistence of biodiversity” (IUCN (2016). A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0). IUCN is also a member of the KBA Partnership, an alliance of 13 global conservation organizations that is leading efforts to identify, map, monitor and conserve KBAs: <https://www.keybiodiversityareas.org/>.