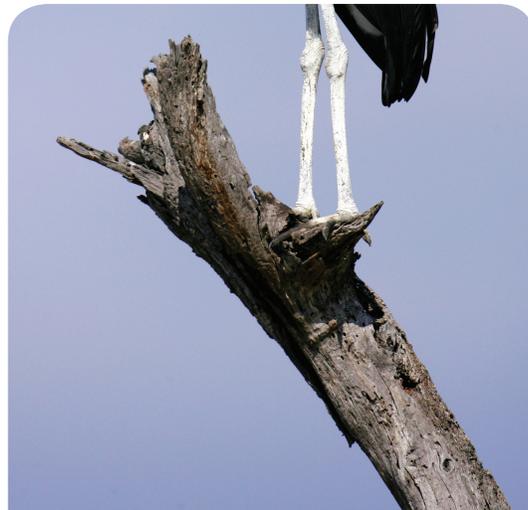
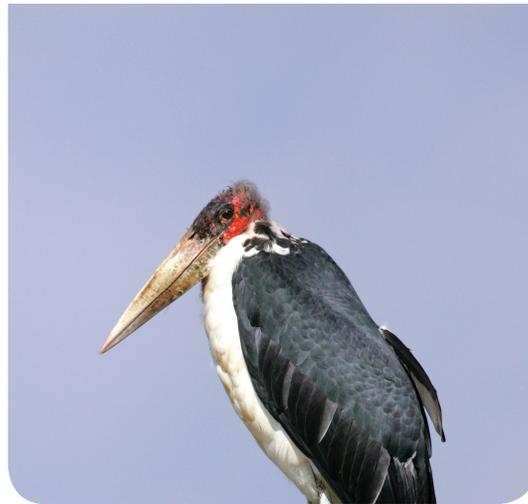


Business and Biodiversity Offsets Programme (BBOP)

Glossary





Forest Trends, Conservation International and the Wildlife Conservation Society provided the Secretariat for BBOP during the first phase of the programme's work (2004 - 2008).

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About this document

The Principles on Biodiversity Offsets and accompanying supporting materials¹ such as this Glossary² have been prepared by the Business and Biodiversity Offsets Programme (BBOP) to help developers, conservation groups, communities, governments and financial institutions that wish to consider and develop best practice related to biodiversity offsets. They were developed by members of the BBOP Secretariat and Advisory Committee³ during the first phase of the programme's work (2004 – 2008), and have benefited from contributions and suggestions from many of the 200 people who registered on the BBOP consultation website and numerous others who have joined us for discussions in meetings.

The Advisory Committee members support the Principles and commend the other working documents to readers as a source of interim guidance on which to draw when considering, designing and implementing biodiversity offsets. Best practice in biodiversity offsets is still in its infancy, and the concepts and methodologies presented here need to be further discussed, developed, tested and refined based on more practical experience and broad debate within society.

All those involved in BBOP are grateful to the companies who volunteered pilot projects in this first phase of our work and for the support of the donors listed overleaf, who have enabled the Secretariat and Advisory Committee to prepare these documents.

BBOP is embarking on the next phase of its work, during which we hope to collaborate with more individuals and organisations around the world, to test and develop these and other approaches to biodiversity offsets more widely geographically and in more industry sectors. BBOP is a collaborative programme, and we welcome your involvement. To learn more about the programme and how to get involved please:

See: www.forest-trends.org/biodiversityoffsetprogram/

Contact: bbop@forest-trends.org

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- 1 The BBOP Principles, interim guidance and resource documents can be found at www.forest-trends.org/biodiversityoffsetprogram/guidelines/. To assist readers, a selection of terms with an entry in this Glossary has been highlighted in other BBOP documents thus: biodiversity offsets. Users of the Web or CD-ROM version of this document can move their cursors over a glossary term to see the definition.
 - 2 This paper was prepared by Paul Mitchell and Kerry ten Kate, with contributions from Jo Treweek, Pierre Berner, Theo Stephens, David Parkes, Conrad Savy, Jack Tordoff, Stuart Anstee and Maryanne Grieg-Gran.
 - 3 The BBOP Advisory Committee currently comprises representatives from: Anglo American; Biodiversity Neutral Initiative; BirdLife International; Botanical Society of South Africa; Brazilian Biodiversity Fund (FUNBIO); Centre for Research-Information-Action for Development in Africa; City of Bainbridge Island, Washington; Conservation International; Department of Conservation New Zealand; Department of Sustainability & Environment, Government of Victoria, Australia; Ecoagriculture Partners; Fauna and Flora International; Forest Trends; Insight Investment; International Finance Corporation; International Institute of Environment and Development; IUCN, The International Union for the Conservation of Nature; KfW Bankengruppe; Ministry of Ecology, Energy, Sustainable Development, and Spatial Planning, France; Ministry of Housing, Spatial Planning and the Environment, The Netherlands; National Ecology Institute, Mexico; National Environmental Management Authority, Uganda; Newmont Mining Corporation; Private Agencies Collaborating Together (Pact); Rio Tinto; Royal Botanic Gardens, Kew; Shell International; Sherritt International Corporation; Sierra Gorda Biosphere Reserve, Mexico; Solid Energy, New Zealand; South African National Biodiversity Institute; Southern Rift Landowners Association, Kenya; The Nature Conservancy; Tulalip Tribes; United Nations Development Programme (Footprint Neutral Initiative); United States Fish and Wildlife Service; Wildlife Conservation Society; Wildlands, Inc.; WWF; Zoological Society of London; and the following independent consultants: Susie Brownlie; Jonathan Ekstrom; David Richards; Marc Stalmans; and Jo Treweek.

During Phase 1 of BBOP, the BBOP Secretariat was served by Forest Trends, Conservation International and the Wildlife Conservation Society.

We thank those organisations that have provided financial support for BBOP’s work⁴: the Alcoa Foundation; Anglo American; City of Bainbridge Island, Washington, USA; Conservation International; Department for International Development, United Kingdom; Department of the Environment, Water, Heritage and the Arts, Australia; Forest Trends; the International Finance Corporation; KfW Bankengruppe; the Ministry of Housing, Spatial Planning and the Environment, The Netherlands; Newmont Mining Corporation; the Richard and Rhoda Goldman Fund; Rio Tinto; Shell International; Sherritt International Corporation; Solid Energy New Zealand; the Surdna Foundation; the United Nations Development Programme/Global Environment Facility; United States Agency for International Development⁵; and the Wildlife Conservation Society.



4 Endorsement of some or all of the BBOP documents is not implied by financial support for BBOP’s work.

5 This document is made possible in part by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of Forest Trends, Conservation International and the Wildlife Conservation Society and do not necessarily reflect the views of USAID or the United States Government.

Glossary

Abiotic factors (see also [Biotic factors](#))

A non-living factor in the environment; e.g. light, water, temperature.

Adaptive management

A continuous process of revising [management plans](#) to take results to date into consideration. Objectives are set, actions to manage natural resources are taken, [monitoring and evaluation](#) of the affected ecosystem and human responses are assessed, results are compared against expectations, and future actions are adjusted, with each iteration of activity based on past experience. Such management is adaptive, because lessons learned are put in practice in the next cycle.

Additionality

A property of a biodiversity offset, where the conservation outcomes it delivers are demonstrably new and additional and would not have resulted without the offset.

Agroforestry

A land use system that intentionally combines the production of herbaceous crops, tree crops, and animals, simultaneously or sequentially, to take fuller advantage of resources. Agroforestry encompasses a wide variety of practices, including intercropping of trees with field crops or grasses, planting trees on field boundaries or irrigation dikes, multi-storey and multi-species forest gardens or home gardens, and cropping systems using bush or tree fallows.

Alleles

Variant forms of the same gene.

Alliance for Zero Extinction site

A site identified by the Alliance for Zero Extinction that meets those partner organisations' criteria, namely that the site must contain at least one Endangered (EN) or Critically Endangered (CR) species, as listed by IUCN - World Conservation Union; the site should only be designated if it is the sole area where an EN or CR species occurs, or contains the overwhelmingly significant known resident population of the EN or CR species, or contains the overwhelmingly significant known population for one life history segment (e.g., breeding or wintering) of the EN or CR species; and the site must have a definable boundary within which the character of [habitats](#), biological communities, and / or management issues have more in common with each other than they do with those in adjacent areas. See <http://www.zeroextinction.org/selection.htm>.

Alternatives

These are different ways of achieving the goals or objectives of a [plan](#) or proposal. Alternatives are also referred to as options. (See also [Analysis of alternatives / options](#)).

Amenity

In the [BBOP](#) context, the term 'amenity' refers to recreational, aesthetic and spiritual values associated with biodiversity, and its contribution to well-being and enjoyment of life.

Analysis of alternatives / options

Assessment by which different project implementation options (engineering) are compared in terms of economic, environmental and social outcomes to choose the best approach to reduce residual impacts and achieve sustainability.

Arrested degradation offset

An intervention to prevent other (development-independent) risks from continuing to operate. This results in biodiversity within the offset area being degraded at a lower rate than biodiversity elsewhere in the surrounding area. The difference in degradation rates before and after intervention, or between offset and non-offset sites, is the biodiversity gain. In this case, it is achieved by reducing destructive influences rather than through restorative management.

Articles of Incorporation (Articles of Association)

The title of the document filed in many states to create a corporation. Also known as the certificate of incorporation or corporate charter.

Attributes

See [Benchmark attributes](#).

Averted risk

The removal of a threat to biodiversity for which there is reasonable and credible evidence.

Averted risk offset

Biodiversity offset interventions which prevent future risks of harm to biodiversity from occurring.

Avoidance

Measures taken to prevent impacts from occurring in the first place, for instance by changing or adjusting the [development project's](#) location and / or the scope, nature and timing of its activities.

Baseline

A description of existing conditions to provide a starting point (e.g. pre-project condition of biodiversity) against which comparisons can be made (e.g. post-impact condition of biodiversity), allowing the change to be quantified.

Baseline studies

Work done to determine and describe the conditions against which any future changes can be measured. In ecological terms, baseline conditions are those which would pertain in the absence of the proposed development (Trewick 1999). The studies required to provide a robust [baseline](#) for [environmental assessment](#) and [monitoring](#) should ideally encompass typical seasonal variations and cover a study area that allows quantification of natural variation and that captures key [ecosystem processes](#).

BBOP

The Business and Biodiversity Offsets Programme. The Business and Biodiversity Offsets Programme (BBOP) is a partnership between companies, governments, conservation experts and financial institutions that aim to explore whether, in the right circumstances, biodiversity offsets can help achieve better and more cost effective conservation outcomes than normally occur in infrastructure development, while at the same time helping companies manage their risks, liabilities and costs. BBOP has been researching and developing best practice on biodiversity offsets and beginning to test it through a portfolio of [pilot projects](#) in a range of contexts and industry sectors, aiming to demonstrate improved and additional conservation and business outcomes. BBOP's expectation is that biodiversity offsets will become a standard part of the development process when projects have a significant residual impact on biodiversity, resulting in long term and globally significant conservation outcomes. Further information on BBOP's vision, results to date and priorities for future work can be found at: <http://www.forest-trends.org/biodiversityoffsetprogram/>.

BBOP outputs

The results of the first phase of BBOP's work, from 2004 – 2008, include:

- The BBOP Principles on Biodiversity Offsets, included in the [BBOP](#) document *Business, Biodiversity Offsets and BBOP: An Overview*, which is available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/overview.pdf.
- Interim guidance comprising: the Biodiversity Offsets Design Handbook (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/odh.pdf); the Cost-Benefit Handbook (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/cbh.pdf); and the Offset Implementation Handbook (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/oih.pdf).
- Resource papers on biodiversity offsets and stakeholder participation (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/participation.pdf); and the relationship between biodiversity offsets and impact assessment (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/eia.pdf).
- This Glossary.
- Case studies of the BBOP [pilot projects](#) (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/).
- Summary case studies of some other examples of compensatory conservation (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/non-bbop-case-studies.pdf).

BBOP pilot project

An investment project for which the developer has committed to work with the BBOP Secretariat and Advisory Committee to design a biodiversity offset for the project's significant residual impacts on biodiversity, after taking appropriate measures first to avoid and minimise the project's impacts and undertake restoration.

BBOP Principles on Biodiversity Offsets

A set of ten principles agreed on 3 December 2008 and supported by the members of the BBOP Advisory Committee. These are incorporated in the [BBOP](#) document *Business, Biodiversity Offsets and BBOP: An Overview*, which is available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/overview.pdf.

Benchmark

A benchmark can be used to provide a reference point against which losses of biodiversity due to a [project](#) and gains through an offset can be quantified and compared consistently and transparently. It usually comprises a number of representative and characteristic 'attributes' used to represent the type, amount and quality of biodiversity which will be lost / gained. Comparing the observed level (or 'score') of each [benchmark attribute](#) at the [impact site](#) (before and as predicted after the impact) against the level at the benchmark can help to quantify the loss of biodiversity to be caused by the project. Similarly, comparing the observed level (or 'score') of each benchmark attribute at the offset site (before the offset and as predicted after the offset intervention) against the level at the benchmark can help to quantify the gain in biodiversity caused by the offset. A benchmark can be based on an area of land that provides a representative example, in a good condition, of the type of biodiversity that will be affected by the proposed development project. A [synthetic benchmark](#) can also be used if no relatively undisturbed areas still remain.

Benchmark attributes

Benchmark attributes are the features of a [biotope](#) or [habitat](#) used to create a [benchmark](#) to represent the type, amount and quality of biodiversity present at a site. They may be to do with structure, composition and function of individual species, features of communities / assemblages, or even characteristics that operate at the landscape scale, such as [connectivity](#).

Best practice (or best management practice)

Established techniques or methodologies that, through experience and research, have proven to lead to a desired result.

Biodiversity

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 (genetic diversity), between species and of ecosystems.

Biodiversity conservation

The deliberate management of biological resources to sustain [key biodiversity components](#) or maintain the integrity of sites so that they support characteristic types and levels of biodiversity. One of the motivations for biodiversity conservation is to maintain the potential of biodiversity to meet the needs of future generations. Conservation includes preservation, maintenance, sustainable utilisation, [restoration](#) and [enhancement](#) of the natural environment.

Biodiversity hotspots

A biodiversity hotspot is a region with significant levels of biodiversity that is threatened with destruction. To qualify as a hotspot, a region must meet two criteria: it must contain at least 1,500 species of vascular plants (> 0.5 percent of the world's total) as [endemics](#), and it must have lost at least 70% of its primary vegetation. These sites support nearly 60% of the world's plant, bird, mammal, reptile, and amphibian species, with a very high share of endemic species. One hotspot can include multiple [ecoregions](#). Biodiversity hotspots represent the set of broad-scale priority regions for work by Conservation International. They are currently terrestrially focused but the process of identifying marine hotspots is underway. See www.biodiversityhotspots.org/xp/hotspots/hotspotsscience/Pages/hotspots_defined.aspx.

Biodiversity inventories

Biodiversity inventories involve surveys to assess the presence and / or abundance of biodiversity components in a study area. These surveys can include both direct counts (e.g. direct observations of individuals, mapping [habitats](#)) or indirect measures using [surrogates](#) (e.g. nest holes, satellite imagery). Survey techniques vary widely based on the characteristics of the biodiversity component, resources available, duration and timing of surveys, and intended use of the information.

Biodiversity loss

Biodiversity loss is usually observed as one or all of: (1) reduced area occupied by populations, species and [community types](#), (2) loss of populations and the [genetic diversity](#) they contribute to the whole species and (3) reduced abundance (of populations and species) or condition (of communities and ecosystems). The likelihood of any biodiversity component persisting (the [persistence probability](#)) in the long term declines with lower abundance and genetic diversity and reduced [habitat](#) area.

Biodiversity Offset Cost-Benefit Handbook

The BBOP Biodiversity Offset Cost-Benefit Handbook provides guidance on how to use economic tools of valuation and cost-benefit analysis to help offset planners do their best to ensure that local people are no worse off through the presence of the project in terms of its impact on biodiversity related livelihoods; local people at the offset site are no worse off as result of the biodiversity offsets, as appropriate and equivalent benefits are built into the offset to compensate for any negative impacts they cause; and calculations of the conservation gain of the biodiversity offset activities are realistic in the assumptions made about how local people will become involved in the offsetting activities. Available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/cbh.pdf.

Biodiversity Offset Design Handbook (and its Appendices)

The BBOP Offset Design Handbook presents information on a range of issues, approaches, methodologies and possible tools from which offset planners can select the approaches best suited to their individual circumstances when designing a biodiversity offset. It describes a generic process that offset planners could use in designing a biodiversity offset, from initial conception of a development project to the selection of offset sites and activities. This involves describing the project; exploring the policy context; engaging stakeholders; undertaking biodiversity surveys and applying the mitigation hierarchy; quantifying residual impacts; identifying and comparing potential offset sites; calculating conservation gains for preferred offset sites; and deciding upon the final scope, scale, nature and location of offset. The companion volume of Appendices does not aim to provide comprehensive coverage of offset methodologies, but offers readers a summary of a sample of approaches relevant to biodiversity offsets and some references on them for further reading. Some of the approaches described are required or recommended by government policies; some are the subject of the lending requirements of banks; some are still under development (the approach adapted and tested by BBOP in its [pilot projects](#), REMEDE, the New Zealand Risk Index Method and Averted Risk Formulae) and some are other supportive or supplementary methodologies. The main document is available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/odh.pdf; the Appendices are available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/odh-appendices.pdf.

Biodiversity Offset Implementation Handbook

The BBOP Biodiversity Offset Implementation Handbook assumes that the nature of offsetting activities and magnitude and location of the offset (in a single location, or as a composite) have already been identified and offers guidance to the offset planner on how to put in place mechanisms for effective institutional and management; sufficient financial flows; and systems for good governance. It offers a discussion of the potential roles and responsibilities of potential stakeholders, legal and institutional aspects of establishing an offset, and how a biodiversity offset management plan can be developed. Then the Handbook suggests a number of ways in which a biodiversity offset can be financed over the long-term. It discusses ways in which to calculate the short and long-term costs of implementing the biodiversity offset, and explores long-term funding mechanisms, such as the establishment of conservation trust funds, and development of non-fund options that explore a diverse array of revenue sources to achieve sustainability. It also discusses how biodiversity offset can be monitored and evaluated, and a final section helps the offset planner prepare to launch the implementation of the offset. Available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/oih.pdf.

Biodiversity offset planner

See [Offset planner](#).

Biodiversity offsets

Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from [project](#) development⁶ after appropriate prevention and [mitigation](#) measures have been taken. The goal of biodiversity offsets is to achieve [no net loss](#) and preferably a [net gain](#) of biodiversity on the ground with respect to species composition, [habitat structure](#) and ecosystem function and people's use and cultural values associated with biodiversity.

Biodiversity Offsets and Stakeholder Participation: a BBOP Resource Paper

See [Resource Paper on Biodiversity Offsets and Stakeholder Participation](#).

Biological diversity

See [Biodiversity](#).

Biotic factors (see also [Abiotic factors](#))

Environmental factors resulting from the activities of living organisms.

Biotope

The combination of [abiotic](#) conditions and an associated community of species. The consistent relationship between the biotic and abiotic elements which determines when and where particular species occur together in repeatable and recognisable combinations. In other words, [habitat](#) shared by many species is called a biotope.

Business, Biodiversity Offsets and BBOP: An Overview

This overview document provides an introduction to BBOP, its work to date, the [Principles on Biodiversity Offsets](#) and challenges of offset development, and the programme's vision for the future. Available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/overview.pdf.

⁶ While biodiversity offsets are defined here in terms of specific development projects (such as a road or a mine), they could also be used to compensate for the broader effects of programmes and plans.

Business case

The business and financial arguments that justify action by business, even in the absence of legally binding requirements to take such steps. In the case of biodiversity offsets, the business case is often articulated in terms of factors such as improved [license to operate](#), access to credit, comparative competitive advantage and reputational benefits.

Certification

A process whereby an independent third party (a certification organisation) certifies that an activity, company or organisation satisfies the requirements set by a performance standard.

Choice experiment

A valuation method that involves asking respondents to choose from a set of [alternatives](#) and select their preferred option. The process of choosing the preferred option involves trading-off between the different [attributes](#) of each alternative, which allows the value placed on changes in characteristics to be estimated.

Civil law

Describing the law practised in continental Europe and many other countries including in the Middle East, Latin America, Asia, and Francophone Africa, led by an investigating judge, as opposed to [common law](#), the adversarial system of law practised in countries following the Anglo-Saxon legal tradition (for example, as practised in Anglophone Africa).

Closure

The planned termination of operations typically associated with remedial measures to restore or otherwise improve negatively impacted environmental and social conditions. In the context of mining, for instance, closure is the period of time when the ore-extracting activities of a mine have ceased, and final decommissioning and mine reclamation are being completed. It is generally associated with reduced employment levels and is also the period when the majority of mine reclamation is completed. To anticipate and minimise impacts that may occur on closure, closure planning can continue throughout the life of a mine, starting with conceptual closure plans prior to production, involving periodic updates throughout the life of the mine, and ending with a final decommissioning plan.

Common law

The system of law based on the adversarial system of trial, where the opposing parties (the prosecution and defence), following strict rules of procedure and evidence, present evidence before an independent arbiter of fact (either a jury or a judge) who decides whether the accused person has been proven guilty or should be acquitted. Judicial decisions arrived at through this system act as precedents which are used as standards and interpretations to be taken into account in reaching other judicial decisions in the future, so expanding and refining the scope and meaning of the law.

Community

In the context of biodiversity offsets, the term 'community' can have two distinct meanings: (1) a social focus – a group of people living together in one area and (2) a biological focus – a naturally occurring, recognisable and repeatable assemblage of plants and / or animals in which populations of different species share the same area or resources at the same time and are mutually sustaining and interdependent.

Community type

A community type is one unit of a classified set of [biotic](#) community types. The word 'type' implies that some form of prior classification and that the biota is more similar within than between types. Ecologists often use multivariate (statistical) techniques to group similar biotic communities and distinguish dissimilar communities. Mapped community types show the distribution of biodiversity at the species and community levels. Land cover maps are a simple form of mapped community type classification. If the classification includes biologically important features of the physical environment (soil, landform, climate, etc.) then the units may reasonably be described as [biotopes](#) or ecosystems. Community types are an important level of biological organisation for biodiversity offset assessment. Every development [project](#) and biodiversity offset contemplated is likely to encompass one or more community types. Note that the term '[habitat](#)' is often (incorrectly) used synonymously.

Compensation

Generally, compensation is a recompense for some loss or service, and is something which constitutes an equivalent to make good the lack or variation of something else. It can involve something (such as money) given or received as payment or reparation (as for a service or loss or injury). Specifically, in terms of biodiversity, compensation involves measures to restore, create, enhance, or avoid loss or degradation of a [community type](#), in order to compensate for [residual impacts](#) on it and / or its associated species.

Composite benchmark

A [benchmark](#) created by drawing on information from several sites.

Composite offset

An offset comprised of activities in more than one location, each of which contributes some but not all of the essential components required to ensure [no net loss](#) of biodiversity.

Concentrated biodiversity

Concentrated biodiversity is defined as a situation where more than 1% of the known global occurrence is within the [project](#) impact area based on IUCN's Best Practice Guidelines on identifying globally important sites for biodiversity, as well as the Ramsar Convention and regional flyway initiatives (e.g. Asia-Pacific Migratory Waterbird Conservation Committee 2001). The presence of such concentrations triggers the minimum established criteria to be recognised as a [Key Biodiversity Area](#).

Condition

The terms 'condition' and 'state' are often used interchangeably to describe the intactness or degree of functionality of ecosystems. For example [state](#) (or condition) might be measured as a fraction representing how much of the biodiversity expected to be present in natural, undisturbed circumstances is actually observed to be present. In the context of biodiversity assessment, 'expectation' might be the undisturbed or natural state indicated by a pristine [benchmark](#) site, historical data or from predictive modelling. Condition can be quantified by (a) species occupancy and (b) structural and functional [attributes](#). Condition measured by species occupancy at the species level is actual abundance expressed as a fraction of abundance at carrying capacity or the proportion of natural range currently occupied. At the community level it is the fraction of species potentially present (at a site) that are actually present or the area currently occupied by the [community type](#) expressed as a fraction of the area naturally occupied by that type. The former describes condition for the species or community at the site, the latter indicates its condition overall across its entire range. Condition measured by structural and functional attributes uses the fraction of particular attribute

measures at the site compared with at a pristine benchmark. This is the approach used in the [habitat hectares](#) method.

Connectivity

The interrelationship between different components or compartments of an original landscape, an ecosystem or a habitat with emphasis on spatial interrelations.

Conservation

See [Biodiversity conservation](#).

Conservation bank

A conservation bank is a parcel of land managed for its conservation values. In exchange for permanently protecting the land, the bank owner is allowed to sell credits to parties who need them to satisfy legal requirements for compensating environmental impacts of development projects. See Carroll *et al.* 2008.

Conservation gains

A conservation gain is indicated by increased [probability of persistence](#) of species populations (as quantified in terms of distribution, abundance, relative density, mortality rates, reproductive success or statistical measures of population viability), improved condition of impacted [community types](#) or a greater area occupied by either without loss of [persistence probability](#) or average condition.

Conservation outcome

A conservation outcome is the result of a conservation intervention aimed at addressing direct threats to biodiversity or their underlying socio-political, cultural and / or economic causes. Conservation outcomes are typically in the form of: (a) [extinctions](#) avoided (i.e. outcomes that lead to improvements in a species' national or global [threat status](#)); (b) sites protected (i.e. outcomes that lead to designation of a site as a formal or informal protection area, or to improvement in the management effectiveness of an existing [protected area](#)); and (c) corridors created (i.e. outcomes that lead to the creation of interconnected networks of sites at the landscape scale, capable of maintaining intact biotic assemblages and natural processes, and, thereby, enhancing the long-term viability of natural ecosystems). Conservation outcomes would also include any other intervention that leads to [conservation gains](#).

Conservation trust fund

A long-term funding mechanism or financial asset that is legally restricted to a specific purpose or set of objectives (e.g. conservation of biodiversity) and is managed by an independent board or trustees or board of directors. Trust funds can be set up as [foundations](#), [non-profit](#) corporations, or other type of institution depending on the legal system in place. A number of mechanisms are possible: [endowments](#), [sinking funds](#), [revolving \(recurrent\) funds](#) or a combination approach.

Contingent ranking

A valuation method that involves asking respondents to rank a series of alternative non-market goods.

Contingent valuation

A valuation method that involves asking respondents how much they would be willing to pay (or accept) for specified increases (or decreases) in the quantity or quality of a good or service (usually applied to non-marketed good or services).

Contract law

A contract is a legally binding exchange of promises or agreement between parties that the law will enforce. Contract law is the branch of law that studies the rights and obligations of parties entering into contracts.

Cost-Benefit Handbook

See [Biodiversity Offset Cost-Benefit Handbook](#).

Critical habitat

A range of lending institutions have recently defined 'critical habitat', accompanied by conditions for clients whose [projects](#) may impact upon it. Common themes mentioned by these definitions include threatened species; [endemic](#) or geographically restricted species; congregations of migratory and other species; assemblages that support key processes or services; and biodiversity of social, economic or [cultural value](#). Examples of definitions include the following:

1. Irrespective of whether it is [natural](#) or [modified](#), some [habitat](#) may be considered to be critical by virtue of (i) its high biodiversity value, (ii) its importance to the survival of endangered or critically endangered species, (iii) its importance to endemic or geographically restricted species and sub-species, (iv) its importance to migratory or congregatory species, (v) its role in supporting assemblages of species associated with key evolutionary processes, (vi) its role in supporting biodiversity of significant social, economical or cultural importance to local communities, or (vii) its importance to species that are vital to the ecosystem as a whole (keystone species) (see EBRD Environmental and Social Policy, 12 May 2008).
2. Critical habitat is a subset of both natural and modified habitat that deserves particular attention. Critical habitat includes areas with high biodiversity value (such as areas that meet the criteria of the IUCN classification), including habitat required for the survival of critically endangered or endangered species (as defined by the [IUCN Red List of Threatened Species](#) or as defined in any national legislation); areas having special significance for endemic or restricted-range species; sites that are critical for the survival of migratory species; areas supporting globally significant concentrations or numbers of individuals of congregatory species; areas with unique assemblages of species or which are associated with key evolutionary processes or provide key [ecosystem services](#); and areas having biodiversity of significant social, economic or cultural importance to local communities (see IFC Performance Standard 6, Biodiversity Conservation and Sustainable Natural Resource Management, 30 April 2006).

Cultural value (of biodiversity)

The aesthetic, spiritual, educational and recreational significance that people associate with biodiversity. These may be intimately connected with their mores, traditions, customs and way of life.

Cumulative effects

An umbrella term for effects that accumulate over space or time. In ecological terms cumulative effects may derive from in combination effects of a project, [plan](#), programme or policy in association with other past, present or reasonably foreseeable future plans and actions. They may also result from time- or space-crowding of development combined with the effects of [stochastic](#) events / changes, including climate change. Consideration of cumulative effects emphasises the need for broad and comprehensive information regarding effects.

Cumulative impact

The total impact arising from the [project](#) (under the control of the [developer](#)); other activities (that may be under the control of others, including other developers, local communities, government) and other background pressures and trends which may be unregulated. The project's impact is therefore one part of the total cumulative impact on the environment. The analysis of a project's incremental impacts combined with the effects of other projects can often give a more accurate understanding of the likely results of the project's presence than just considering its impacts in isolation.

Currency

The concepts of currency, [offset ratios](#) and [multipliers](#) are often conflated in the literature. Currencies (or [metrics](#)) are the unitary measures of biodiversity lost, gained or exchanged. This varies from very basic measures such as area, to sophisticated quantitative indices of multiple biodiversity components which may be variously weighted. A number of different currencies for biodiversity offsets are described in the [BBOP Biodiversity Offset Design Handbook](#) (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/odh.pdf).

Data deficient biodiversity

Data deficient biodiversity includes any species classified as Data Deficient (DD) or Not Evaluated (NE) by the [IUCN Red List of Threatened Species](#), and any biodiversity not included in any national priorities or new to science. A taxon is listed as Data Deficient when there is inadequate information to make an assessment of its risk category, either through lack of knowledge of population size, threats to it, or to taxonomic uncertainty of the validity of the taxon.

Developer

Any individual or public or private institution or agency undertaking a [project](#) such as building a road, mine, house, expanding agricultural operations etc.

Direct area of influence

The area in which [direct impacts](#) on biodiversity occur which can be attributed to [project](#) activities alone. A project's area of direct influence may or may not coincide with the project footprint as it reflects 'effect distances' (the distance over which particular effects, such as noise, are felt) for project activities and emissions.

Direct impacts

An outcome directly attributable to a defined action or [project](#) activity (often also called primary impact).

Direct use values

The benefit derived from using biological resources as an input to production or for consumption.

Discount rate

A weight which when applied to costs or benefits occurring at different points in the future makes them comparable to costs or benefits occurring today.

Diversity index

In ecology, diversity is a measure of variety and abundance. Diversity indices describe the relationship of the number of taxa (richness) to the number of individuals per taxon (abundance) for a given community. Several indices are in common use. [Biological diversity](#) is usually described as one of four types: alpha, beta, gamma and delta diversity. Alpha biodiversity describes biological richness, the number of taxa at a particular level (e.g. species, genus, family) present within a site or ecosystem. Richness usually increases towards the equator and with moderate natural disturbance. Beta diversity describes turnover, the rate at which community composition changes with geographic distance of along environmental gradients. The coast (land, intertidal zone, to shallow marine) is typically an area with very high beta-biodiversity. Gamma biodiversity describes overall diversity across ecosystems. Delta biodiversity describes biological diversity in similar environments (e.g. the 'Mediterranean' environments of Australia, California and Europe). There are numerical indices to quantify measures for each of these types of biological diversity.

Easement

A right to use a part of land which is owned by another person or organisation (e.g. for access to another property). A conservation easement can be defined as a 'legally binding agreement not to develop part of a property, but to leave it 'natural' permanently or for some designated very long period of time. The property still belongs to the landowner, but restrictions are placed both on the current landowner and on subsequent landowners'.

Ecoregion

A relatively homogeneous, ecologically distinctive area which has resulted from a combination of geological, landform, soil, vegetative, climatic, wildlife, water and human factors.

Ecoregional planning

A methodical and comprehensive process for setting conservation priorities which is focused on [ecoregions](#) rather than political jurisdictions.

Ecosystem

A dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.

Ecosystem approach

A strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way based on the application of appropriate scientific methodologies focused on levels of biological organisation which encompass the essential processes, functions and interactions among organisms and their environment. The ecosystem approach was designed to help reach a balance of the three objectives of the Convention on Biological Diversity (conservation and sustainable use of biodiversity and the fair and equitable sharing of the benefits arising from the use of genetic resources). It recognises that humans, with their cultural diversity, are an integral component of ecosystems.

Ecosystem connectivity

See [Connectivity](#).

Ecosystem fragmentation

See [Fragmentation](#).

Ecosystem function / process

Functions or processes carried out or enabled by an ecosystem that are necessary for the self-maintenance of that ecosystem, such as seed dispersal, primary production, nutrient cycling and pollination. Some key ecological functions are energy capture, production, decomposition, nutrient and energy cycling, dispersal, and pollination. Loss of function is associated with instability and ecosystem change. Some ecosystem functions are often also [ecosystem services](#) because they are directly beneficial to people.

Ecosystem services

The benefits people obtain from ecosystems. These include provisioning services such as food, water, timber, and fibre; regulating services that affect climate, floods, disease, wastes, and water quality; cultural services that provide recreational, aesthetic, and spiritual benefits; and supporting services such as soil formation, photosynthesis, and nutrient cycling.

Ecosystem type

A biological community and the physical environment functioning and recognisable as a unit. An ecosystem type is one unit of a classified set of ecosystems. The word 'type' implies some form of prior classification and that both the biota and physical environment is more similar within than between types. Ecologists often use multivariate (statistical) techniques to group like ecosystems and distinguish dissimilar ecosystems. Mapped ecosystem types show the distribution of biodiversity at the ecosystem level and are useful for regional to continental scale analyses. Ecosystem classifications and maps are particularly useful for understanding the ecological context of development impacts and offsets.

Ecotourism

The International Ecotourism Society defines ecotourism as “responsible travel to natural areas that conserves the environment and improves the well-being of local people”.

Ecotype

A subdivision of a species consisting of a population that is adapted to a particular set of environmental conditions. An ecotype is a distinct entity that is closely linked (in its characteristics) to the ecological surroundings it inhabits. For example it is commonly accepted that the Tucuxi dolphin has two ecotypes – the riverine ecotype found in some South American rivers and the pelagic ecotype found in the South Atlantic Ocean. The term ecotype was coined in 1922 by Swedish botanist Göte Turesson.

Element distribution modelling (EDM)

A process that maps environments predicted to be suitable or unsuitable for occupation by a given biodiversity component (species or community) in a given area.

Endemic

Confined to, or indigenous in, a certain area or region.

Endemism

The relative abundance of [endemic](#) species found within a geographic area or region.

Endowment fund

An endowment fund is a type of fund that spends only the interest earned from its investments and not its capital to finance agreed-upon activities. The capital is managed to exist in [perpetuity](#). Investments may include bonds, private bank accounts, real estate, etc. Re-investing unused interest income can substantially increase the size of the endowment fund over time.

Enhancement

The improvement of the ability of a degraded ecosystem to support biodiversity, through conservation measures such as alteration to the soils, vegetation and / or hydrology. The term is sometimes used for a type of [restoration](#) which enhances the biodiversity present but is not couched in terms of restoring the ecosystem to some prior state.

Environment

The general definition is the complex of physical, chemical, and biological factors in which a living organism or community exists. In ecology, environment is often conceived as the physical (i.e. climate, substrate, geochemical) nature of ecosystems. Environments are typically mapped on the basis of soil, geology, landform and climate variables. A [Generalised Dissimilarity Model](#) (GDM) classifies the physical environment in a manner that best describes biological turnover ([beta biodiversity](#)).

Environmental and Social Impact assessment (ESIA)

A process for predicting and assessing the potential environmental and social impacts of a proposed [project](#), evaluating [alternatives](#) and designing appropriate [mitigation](#), management and [monitoring](#) measures.

Environmental and Social Management Plan

An action plan or system, which addresses the 'how, when, who, where and what' of integrating environmental and social [mitigation](#) and [monitoring](#) measures throughout an existing or proposed operation or activity. It encompasses all the elements that are sometimes addressed separately in mitigation, monitoring and action plans.

Environmental Assessment (EA)

The critical appraisal of the likely effects of a proposed [project](#), activity, or policy on the environment, both positive and negative. A generic term that may cover strategic- or project-level assessment ([Strategic Environmental Assessment](#) and [Environmental Impact Assessment](#) respectively) and that may also encompass a range of specialist disciplines including social impact assessment, health impact assessment, and noise impact assessment.

Environmental Impact Assessment (EIA)

A formalised process, including public consultation, in which all relevant environmental consequences of a [project](#) are identified and assessed before authorisation is given. The process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.

Environmental Impact Study or Statement (EIS)

In many but not all [Environmental Impact Assessment](#) (EIA) regimes, the environmental information provided by the promoter to the competent authority is presented in the form of an EIS: the written report resulting from the EIA process.

Environmental Management System (EMS)

A system that provides a framework for monitoring and reporting on an organisation's environmental performance. This typically involves organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.

Epistemic uncertainty

Uncertainty derived from missing, incomplete or inadequate data and information. This can be caused by sampling error, or measurement biases. This type of uncertainty can be reduced through further research and data gathering.

Equator Principles

Adopted in June 2003 by ten international commercial banks, the Equator Principles are a voluntary set of guidelines for managing environmental and social issues in project finance. The Principles are based on the International Finance Corporation's (IFC) environmental and social standards and were developed with its advice and guidance. As of October 2008, 63 financial institutions had adopted the Principles, and it is estimated that they now cover approximately 80 percent of global project lending. On July 6, 2006, a revised version was adopted, reflecting recent revisions to International Finance Corporation's own Performance Standards on Social and Environmental Sustainability. The new Equator Principles apply to all countries and sectors, and to all project financings with capital costs above US\$ 10 million.

See <http://www.equator-principles.com/index.shtml>.

Exchange criteria

A set of rules established by policy makers or [offset planners](#) to define which components of biodiversity can and cannot be substituted for others in a biodiversity offset. These rules may be explicit, or they may be implicit within the definitions adopted of biodiversity offsets and associated requirements, such as '[like-for-like](#)', '[trading up](#)', and '[non-tradable](#)' components.

Extinction

Extinction is the cessation of existence of a species or group of taxa. A species becomes extinct when the last existing member of that species dies. Extinction becomes a certainty when there are no surviving individuals that are able to reproduce and create a new generation. A species may become functionally extinct when only a handful of individuals survive, which are unable to reproduce due to poor health, age, sparse distribution over a large range, a lack of individuals of both sexes (in sexually reproducing species), or other reasons.

Extirpation

The elimination of a species from a particular area, but which still exists somewhere else.

Footprint

The area of land or water covered or affected by a project. This can include the direct physical coverage (i.e. the area on which the project physically stands) and the area directly affected by the project (i.e. the area affected by disturbances that directly emanate from the project, such as noise).

Forest connectivity

See [Connectivity](#).

Forest fragmentation

See [Fragmentation](#).

Foundation

A foundation is generally a [non-profit](#) organisation, recognised in law. Foundations often have charitable status and purposes. Foundations may either donate funds and support to other organisations, or provide the sole source of funding for their own charitable activities. In certain countries and regulatory environments the term foundation may have a more narrowly defined meaning.

Fragility

Fragility is a term sometimes associated with [vulnerability](#) and usually applies at ecological community and ecosystem levels. It indicates the sensitivity of a biodiversity component to disturbance – how much disturbance is required to permanently change the community or ecosystem. Its ecological antonym is [resilience](#). Communities and ecosystems that are highly evolved, with many interdependent species, little vacant niche space and not subject to routine disturbances are likely to be fragile. Examples of ‘fragile’ ecosystems include seamount communities, coral reef communities and low-fertility lakes. Fragility is indicated by the persistence of changes caused by simple disturbances, such as one-off trawling, a single invasive species (crown-of-thorns starfish) and acid rain. Most fragile ecosystems are also [vulnerable](#).

Fragmentation

The disruption and spatial and functional break-up of extensive habitats into isolated and small patches, often by roads, housing developments, and other human activities.

Free, prior and informed consent

The concept of free, prior and informed consent (or FPIC) ‘recognizes indigenous peoples’ inherent and prior rights to their lands and resources and respects their legitimate authority to require that third parties enter into an equal and respectful relationship with them, based on the principle of informed consent’ (see Commission on Human Rights, Sub-Commission on the Promotion and Protection of Human Rights, Working Group on Indigenous Populations, Twenty-second session, 19 -13 July 2004, p.5).

Gains

See [Conservation gains](#).

Generalised Dissimilarity Model (GDM)

A Generalised Dissimilarity Model (GDM) is a method for classifying and mapping environments in a manner that describes biodiversity composition across a region or country. It was developed for use in terrestrial settings by Ferrier *et al.* (2002) (see also Ferrier *et al.* 2007). The GDM uses matrix regression techniques, specifically accommodating both (1) the curvilinear relationship between ecological distance and compositional dissimilarity between sites ([beta-biodiversity](#)), and (2) variation in the rate of compositional turnover both between and along environmental gradients. Rather than using parametric transforms of the environmental variables, GDM uses flexible splines constrained to be positively monotonic. This captures the manner in which biological differences between sites generally increase with increasing separation along environmental gradients. As in conventional spline-based regression (e.g. Hastie *et al.* 2001) the amplitudes of the fitted functions control the magnitude of the contributions associated with each environmental gradient fitted in the final model. In addition, using data-driven splines provides a more flexible means to accommodate

non-linear changes in species turnover along each gradient. Thus GDM is currently the most precise and sophisticated way to describe and map biodiversity compositional pattern.

Genetic diversity

Genes are the basic building blocks of biodiversity. Species share a distinct and recognisable [genome](#), but there may also be considerable genetic variation between individual members of a species or between distinct populations. Genetic diversity is a measure of the variability of genes between individuals within a species population. It is important because it allows species to adapt to changing environmental circumstances: the poorer its genetic base, the more vulnerable a species is to [extinction](#).

Genome

The complete genetic material of an organism.

Go / No Go

The decision as to whether a [project](#) should proceed or not, usually taken by regulators and / or companies prior to project inception based on a complex dialogue involving a range of [stakeholders](#) and concerns, of which impacts on biodiversity are only one. A 'No Go' decision may be taken because a project is not suitable for reasons other than its impacts on biodiversity. Equally, a project with a very significant, [non-offsetable](#) impact on biodiversity may still result in a 'Go' decision based on other benefits (such as needed infrastructure, jobs or development), considered to outweigh its environmental costs.

Governance

The method or system by which an organisation is run and controlled. The planning, influencing and conducting of the policy and affairs of an organisation.

Ground-truthing

Verification on the ground of data drawn from remote sources or assumptions / conclusions developed from such data.

Habitat

'Habitat' is strictly a species-concept, referring to the particular [abiotic](#) and [biotic](#) conditions with which individuals or populations of the same species are typically associated. The term 'habitat' is also often extended to refer to the circumstances in which populations of many species tend to co-occur, in which case it is strictly a [biotope](#).

Habitat – critical

See [Critical habitat](#).

Habitat connectivity

See [Connectivity](#).

Habitat Evaluation Procedure

Habitat Evaluation Procedure (HEP) combines theoretical knowledge of a species' [habitat](#) needs with field survey to document the quantity and quality (in terms of carrying capacity) of habitat available and to compare it with 'ideal' or 'optimum' conditions.

Habitat fragmentation

See [Fragmentation](#).

Habitat hectares

Units of measurement that take into account the area affected and the quality or [condition](#) of the biodiversity impacted (determined by the quantities of a number of chosen attributes related to the structure, composition and function of that [habitat](#)). The habitat hectares [metric](#) was originally developed in Victoria, Australia to focus on [habitat structure](#), particularly native vegetation, and thus to provide proxies for composition and function. Some BBOP partners have adapted the approach to cover both flora and fauna, and to include some aspects of composition and function as [benchmark attributes](#).

Habitat irreplaceability

For [habitat](#), irreplaceability can occur in two major ways: first, the habitat is spatially restricted and second the habitat provides a resource (food, fuel, etc.) to local communities that cannot be replaced from elsewhere. Pressey *et al.* (1994) defined the irreplaceability of a site in two ways: (1) the likelihood that it will be required as part of a conservation system needed to achieve a set of targets; and (2) the extent to which the options for achieving the set of targets are reduced if the area is unavailable for conservation.

Habitat structure

The arrangement of biodiversity components in space, with three major variables: complexity (the amount of structure or variation attributable to absolute abundance of individual structural components), heterogeneity (the kinds of structure or variation attributable to the relative abundance of different structural components) and scale (which emphasises that the first two components must be commensurate with the dimensions of the organisms being studied). It would probably be more accurate to refer to '[community](#) structure'.

Habitat type

A distinct [habitat](#).

Hedonic pricing

A valuation method that attempts to isolate the specific influence of an environmental amenity on the market price of a good or service, e.g. property prices.

Heterozygosity

Genetic variability among individuals within populations and variability among populations.

High Biodiversity Wilderness Area

High Biodiversity Wilderness Areas (HBWAs) are large areas (at least 10,000 km²) consisting of regions defined by their relatively undisturbed nature (at least 70% intact) and high level of species [endemism](#) (at least 1,500 [endemic](#) plant species). These form a supplementary broad-scale priority to [biodiversity hotspots](#) for Conservation International.

Hotspots

See [Biodiversity hotspots](#).

Impact – cumulative

See [Cumulative impact](#).

Impact – direct

See [Direct impact](#).

Impact – indirect

See [Indirect impact](#).

Impact site

The area affected by the [direct](#), [indirect](#) and [cumulative impacts](#) attributable to the [project](#) being developed (see also [Footprint](#)).

Impact site communities

Communities in the area affected by the impacts of a development [project](#).

Important Bird Areas (IBAs)

IBAs are sites of international importance for bird conservation at the global, regional or national level, based upon standard, internationally recognised criteria. IBAs are not only important for birds but also typically support a wide range of other important animal and plant species. All IBAs meet at least one of the following criteria: A1 – the site is known or thought regularly to hold significant numbers of a Globally Threatened bird species; A2 – the site is known or thought to hold a significant component of a group of bird species whose breeding distributions define an Endemic Bird Area or Secondary Area; A3 – the site is known or thought to hold a significant component of the group of bird species whose distributions are largely or wholly confined to one biome; A4i – the site is known or thought to hold, on a regular basis, 1% or more of a biogeographic population of a congregatory waterbird species; A4ii – the site is known or thought to hold, on a regular basis, 1% or more of the global population of a congregatory seabird or terrestrial species; A4iii – the site is known or thought to hold, on a regular basis, at least 20,000 waterbirds, or at least 10,000 pairs of seabird, of one or more species; A4iv – the site is known or thought to be a 'bottleneck site', where at least 20,000 raptors or cranes pass regularly during spring and / or autumn migration (source: BirdLife International (2004) *Important Bird Areas in Asia: key sites for conservation*. Cambridge, UK: BirdLife International – see <http://www.nhbs.com/title.php?tefno=138123>).

Indicator

A measure of variables over time often used to measure achievement of objectives. Although individual indicators will vary from project to project, 'good' indicators follow the SMART philosophy (specific, measurable, achievable, relevant and timely).

Indirect area of influence

The area in which [indirect](#) (sometimes called [secondary](#) or [induced](#)) impacts occur as a consequence of the [project](#) being developed, rather than being directly caused by the project itself. Typically, the indirect area of influence will fall outside the immediate project boundary and may include settlements and developments that have been established or expanded as a result of the presence of the project.

Indirect impacts

Indirect impacts (sometimes called [secondary impacts](#) or [induced impacts](#)), are impacts triggered in response to the presence of the [project](#), rather than being directly caused by the project's own operations. For instance, the presence of a project such as an oil and gas facility may lead to an increased local workforce and associated increases in demand for food. This may have knock-on effects on biodiversity, for example due to increased land conversion for farming or increased levels of hunting. Indirect impacts may reach outside project boundaries and may begin before or extend beyond a project's lifecycle. Indirect impacts should be predicted with a thorough [Environmental and Social Impact Assessment](#) (ESIA) process that includes biodiversity issues and explicitly links environmental and social issues, but there is a risk that the potential for such impacts may not be identified until later in the project cycle. As a general rule, indirect impacts are more difficult to map and quantify than [direct impacts](#).

Induced impacts

These impacts are not directly caused by a project itself but occur as an unplanned consequence of it. Induced impacts are often a result of socioeconomic changes resulting from the presence of a project and responsibility for managing them is likely to be shared with others, including government. They may include positive and negative impacts. It is important to be aware of the relative contribution a project might make to induced effects so that possible benefits can be maximised and adverse consequences avoided.

Information-gap theory (info-gap theory)

A non-probabilistic approach to tackling uncertainty and identifying management solutions that will deliver reliable outcomes. The basis of this method is to determine the management option that is most robust to uncertainty while achieving a minimum outcome.

Informed consent

A situation in which a person can be said to have given consent based upon an appreciation and understanding of the facts and implications of an action, before the action has taken place. See also [free, prior and informed consent](#).

In-kind

Conservation (through the biodiversity offset) of the same type of biodiversity as that affected by the [project](#). Sometimes known as [like-for-like](#).

Intrinsic value

The inherent worth of something, independent of its value to anyone or anything else. Something has an intrinsic value when it is valuable 'in itself' or 'for its own sake'. Some national law (e.g. The Endangered Species Act in the United States) protects species that are not 'valuable' to humans in any readily definable way, based on the idea that they have intrinsic value. The United Nations World Charter for Nature (1982) also notes biodiversity's intrinsic value: "Every form of life is unique, warranting respect regardless of its worth to man."

Irreplaceability

Irreplaceability (or uniqueness) reflects the number of additional spatial options available for conservation if the biodiversity affected by the [project](#) were irreversibly lost. Where biodiversity occurs at many sites (low irreplaceability), many options exist for conservation, whereas where biodiversity is restricted to one or few sites (high irreplaceability), few options exist for conservation elsewhere. Measures of irreplaceability must be

clearly referenced to geographic scale. Something is considered irreplaceable if conservation goals for that component cannot be achieved without it.

IUCN Red List of Threatened Species™

The International Union for Conservation of Nature's (IUCN) primary database on the status and distribution of globally threatened species. Individual species are assessed by a network of specialist expert groups which convene workshops to compile and review the best available information on species. The categorisation of species is based on a set of explicit quantitative criteria and standards which are subject to review and continuous appraisal. The Red List provides taxonomic, conservation status and distribution information on taxa that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of [extinction](#), and the main purpose of the IUCN Red List is to catalogue and highlight those taxa that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable). The full Red List categories are EX: Extinct; EW: Extinct in the Wild; CR: Critically Endangered; EN: Endangered; VU: Vulnerable; NT: Near Threatened; LC: Least Concern; DD: [Data Deficient](#); NE: Not Evaluated. Some older assessments refer to LR (lower risk), which incorporated 'Conservation Dependent' (LR/cd), 'Near Threatened' (LR/nt) and 'Least Concern' (LR/lc). The term 'threatened' is used to describe species under any risk of extinction (i.e. categories CR, EN and VU). The LR category is no longer used, but where an assessment of a species has not recently been updated, it may be the only assessment available. See <http://www.iucnredlist.org/>.

Key Biodiversity Areas

Sites, including both protected and unprotected sites, mapped at a national scale by local partners using a globally standardised framework drawn from IUCN's Best Practice Protected Areas guidelines series. Sites are considered globally important if they are known to hold one or more globally threatened species, [endemic](#) species, globally significant concentrations or populations, significant examples of biological communities, or any combination of these features. These sites, known as Key Biodiversity Areas, build upon the work of other initiatives – such as BirdLife International's Important Bird Areas, PlantLife International's Important Plant Areas, IUCN's Important Sites for Freshwater Biodiversity and sites identified by the [Alliance for Zero Extinction](#) – to map important sites for a wide range of critical biodiversity in marine, freshwater and terrestrial biomes. These datasets are drawn from the World Biodiversity Database (WBDB), managed by BirdLife International and Conservation International, which is informed by the [IUCN Red List of Threatened Species™](#).

Key biodiversity components

The biodiversity components identified during an assessment process as being particularly significant in a given area for conservation. Key biodiversity components exist at a number of levels (genes, species, communities / assemblages and ecosystems) and may be important because they are valued 'in their own right' (intrinsic, existence values – like a rare species), or if they are important in a utilitarian sense ([use values](#) – like fuelwood, medicinal plants or processes like water purification on which people rely) or in a cultural sense (for spiritual, religious and aesthetic values).

Land registration

In law, land registration is a system by which the ownership of estates in land is recorded and registered, usually by government, in order to provide evidence of title, to clarify rights and responsibilities and to facilitate transfer.

Land trust

[Non-profit](#) organisations that work with landowners interested in protecting open space.

Landscape

Visible features of an area of land, including physical elements such as landforms, living elements of flora and fauna, abstract elements such as lighting and weather conditions, and human elements, for instance human activity or the built environment. Landscape means different things to different people. Within the scientific community, a landscape can be a watershed, a region defined by soil or vegetation type, or an ecologically cohesive space. When the human dimension is overlain, the same biophysical landscape can have its boundaries redefined. At the grassroots level, landscape may be the local forest, watershed or even agriculture community. For the ecologist, landscape may be the [habitat](#) and connecting corridors necessary for a species to survive. At the national level, landscape may mean an entire bioregion that crosses political boundaries and encompasses multiple watersheds, towns, villages, highways, flora, fauna, core protected areas, buffers and corridors.

Landscape connectivity

See [Connectivity](#).

Landscape context

The context beyond the development [project](#) site that is likely to influence offset design and implementation, including (a) strategies identified in regional conservation and development [plans](#), including information on threats and targets (this can support consideration of issues such as [connectivity](#) in the siting of offsets); (b) issues of scale, including connectedness to other natural / human features; (c) the need to ensure [additionality](#) given other conservation activities already taking place across the [landscape](#) and avoid [leakage](#).

Landscape fragmentation

See [Fragmentation](#).

Landscape level planning

Whether conducted to guide conservation, sustainable land use or development, landscape level planning sets out to tackle issues that are not tractable at the very local scale by taking a multi-stakeholder perspective at a wider, landscape scale. It encompasses a diverse range of practices that seek to link grassroots and community-based actions at the site, farm or forest levels to the broader landscape or ecosystem level, taking into consideration national and regional perspectives.

Landscape scale conservation

Designing, planning, financing and managing projects with significant natural conservation value while incorporating the cultural and economic activities of people situated in the [landscapes](#) involved.

Leakage

The displacement of activities that harm biodiversity from one location to another location.

Licence to operate

See [Social licence to operate](#).

Lifecycle (of project)

All phases or stages between a project's conception and its termination. Can typically include feasibility / scoping, exploration, planning / evaluation, permitting, commissioning, operation, and closure.

Like-for-like

Conservation (through the biodiversity offset) of the same type of biodiversity as that affected by the [project](#). More frequently referred to as [in-kind](#). Several biodiversity offset policies are based on a principle either of 'like-for-like' or of 'like-for-like or better'.

Livelihood

A person's means of supporting himself / herself. Aspects of biodiversity important from a livelihoods perspective may include plants and animals (e.g. consumed, sold for cash or exchanged for other goods); [ecosystem services](#) (e.g. provision of clean water) and [non-use values](#) (e.g. support of [ecotourism](#) activities).

Logical framework approach (LFA)

A management tool mainly used in the design, [monitoring and evaluation](#) of development [projects](#).

Management plan

A tool that sets out the actions needed to achieve an agreed goal, accompanied by a schedule and budget for those actions. A management plan should also identify those tasked with implementation, governance, monitoring and evaluating progress in achieving the goal within the agreed timelines and budget, and reporting the results.

Market price method

A valuation method which estimates the value of an environmental good or service by observing the price at which it is exchanged in the market and deducting the costs involved in getting the good or service from its natural state to the form in which it is marketed.

Metapopulation

A metapopulation is a species population consisting of several subpopulations linked by immigration and emigration. These subpopulations exist in either source areas, where the ecological conditions meet all the needs of the species, so that the population grows (births > deaths); or in sink areas, where individuals can exist, but where some important ecological need is not met with the result that the population declines (births < deaths). The continued presence of the species in a sink depends on immigration of new individuals from a source. However, in a metapopulation, the relationship between source and sink areas is dynamic, with some source areas becoming sinks and some sinks becoming sources. Metapopulation dynamics and the genetic variation across subpopulations are key components of evolutionary processes (e.g. speciation).

Metrics

A set of measurements that quantifies results. See also [currency](#). A number of different metrics for biodiversity offsets are described in the BBOP Offset Design Handbook (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/odh.pdf).

Micro-credit

A loan granted to set up or develop the smallest companies and enterprises. The resources are awarded to people who do not qualify for the banking system, as they cannot offer real guarantees or make a large enough personal contribution.

Micro-finance

Financial services (loans, savings, insurance) for people ineligible for standard banking services because they cannot offer bank guarantees.

Mitigation

Measures which aim to reduce impacts to the point where they have no adverse effects. Examples of mitigation measures include [avoidance](#) of sensitive sites or disruptive work at sensitive times (e.g. breeding seasons), translocation of species to temporary or permanent alternative sites, post-project site [restoration](#) and recolonisation / stocking and the creation of similar [habitats](#) to offset [residual impacts](#).

Mitigation hierarchy

The mitigation hierarchy is defined as:

- a. [Avoidance](#): measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity. This results in a change to a 'business as usual' approach.
- b. Minimisation: measures taken to reduce the duration, intensity and / or extent of impacts that cannot be completely avoided, as far as is practically feasible.
- c. [Rehabilitation](#) / [restoration](#): measures taken to rehabilitate degraded ecosystems or restore cleared ecosystems following exposure to impacts that cannot be completely avoided and / or minimised.
- d. Offset: measures taken to compensate for any residual significant, adverse impacts that cannot be avoided, minimised and / or rehabilitated or restored, in order to achieve [no net loss](#) or a [net gain](#) of biodiversity. Offsets can take the form of positive management interventions such as [restoration](#) of degraded habitat, [arrested degradation](#) or [averted risk](#), protecting areas where there is imminent or projected loss of biodiversity.

Modified habitat

[Habitat](#) where there has been apparent alteration of the [natural habitat](#), often linked with deforestation and / or the introduction of alien species of plants and animals, whether for agriculture or other anthropogenic activities.

Monitoring

Activities undertaken after the decision is made to adopt the [plan](#), programme or [project](#) to examine its implementation. For example, monitoring to examine whether the significant environmental effects occur as predicted or to establish whether [mitigation](#) measures are implemented.

Monitoring and evaluation

Monitoring and evaluation (M&E) are the primary mechanisms to assess whether a [project](#) is meeting its targets over various spatial and temporal scales. Monitoring and evaluation should be considered a key component of [offset implementation](#) and receive adequate attention in the offset budgeting process.

Multiplier

The [offset ratio](#) is an observation of the area occupied by an offset divided by the area affected by an impact. Use of a 'multiplier' represents a decision made by an [offset planner](#) to increase the area of an offset by a certain factor, with the aim of improving the chances of achieving [no net loss](#). However, the terms ratio and multiplier are often used interchangeably.

Natural habitat

Land and water areas where the biological communities are formed largely by native plant and animal species, and where human activity has not essentially modified the area's primary ecological functions.

Net gain

See [no net loss](#).

Net present value

The sum of the stream of benefits less costs expected over the lifetime of a [project](#) or activity, discounted to the present day.

No net loss

A target for a development [project](#) in which the impacts on biodiversity caused by the project are balanced or outweighed by measures taken to avoid and minimise the project's impacts, to undertake on-site [restoration](#) and finally to offset the [residual impacts](#), so that no loss remains. Where the gain exceeds the loss, the term 'net gain' may be used instead of no net loss. No net loss (or net gain) of biodiversity is a policy goal in several countries, and is also the goal of voluntary biodiversity offsets.

Non-extractive direct use values

[Direct use values](#) that can be captured without involving consumption or extraction of the underlying biodiversity resource, for example, recreational value such as [ecotourism](#).

Non-governmental organisation (NGO)

A [non-profit](#), voluntary group of people or association organised outside of institutionalised political structures to realise particular social objectives (such as conserving nature) or serve particular constituencies (such as local communities).

Non-offsetable threshold / Non-offsetable impacts

This is a level of severity beyond which impacts on biodiversity by a development [project](#) may no longer be capable of being offset. For example, it is not possible to offset the global [extinction](#) of a species. Levels of [irreplaceability](#) and [vulnerability](#) of the [biodiversity components](#) to be affected by the project, and the degree of uncertainty with respect to severity of impacts and the probability of success of a biodiversity offset, are all likely to be material factors in determining whether impacts on biodiversity can be offset.

Non-profit

A non-profit organisation / institution is a legally constituted organisation / institution whose objective is to support or engage in activities of public or private interest without any commercial or monetary profit. See also [not-for-profit](#).

Non-tradable

The term 'non-tradable' is used to refer to components of biodiversity which are considered by policy makers or offset planners to be sufficiently important that they cannot be substituted by different components in an offset. [Exchange criteria](#) and particular [currencies](#) or [metrics](#) may also be used to ensure that biodiversity offsets do not accept the loss of non-tradable components of biodiversity.

Non-use values

Intangible benefits derived from the mere existence of environmental resources or environmental quality.

Not-for-profit

A corporation or other institution organised for some charitable, civil or other social purpose which does not entail the generation of profits for shareholders. See also [non-profit](#).

Objective

A statement of what is intended, specifying the desired direction of change in trends.

Offset activities

Offset activities are the set of activities identified to achieve [no net loss](#) or a net gain of biodiversity in the specific context of the development [project](#) concerned. They can involve a mixture of activities that typically involve the conservation of biodiversity, the sustainable use of its components and ensuring that [stakeholders](#) are benefited by the presence of the development project and motivated to support the proposed biodiversity offset. A very broad range of activities may be suitable. These generally tend to involve one or all of the following:

- *Undertaking positive management interventions* to restore an area or stop degradation: improving the conservation status of an area of land by restoring [habitats](#) or [ecosystems](#) and reintroducing native species. Where proven methods exist for successful [reconstruction](#) or creation of ecosystems these may be undertaken. In other instances, a project might reduce or remove current threats or pressures by, for instance, introducing alternative sustainable [livelihoods](#) or substitute materials.
- *Averting risk*: protecting areas of biodiversity where there is imminent or projected loss of that biodiversity; entering into agreements such as contracts or covenants with individuals in which they forego the right to convert habitat in the future in return for payment or other benefits received now.
- *Providing [compensation](#) packages* for local stakeholders affected by the development project and offset, so they benefit from the presence of the project and offset and support these initiatives.
- Supporting actions such as awareness raising, environmental education, research and capacity building are a welcome contribution to conservation and can be important to the overall success of a biodiversity offset, but they are not considered part of the core offset, unless there is evidence of measurable on the ground conservation outcomes.

Offset Design Handbook

See [Biodiversity Offset Design Handbook \(and its Appendices\)](#) (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/odh.pdf and www.forest-trends.org/biodiversityoffsetprogram/guidelines/odh-appendices.pdf respectively).

Offset implementation

The process of putting [offset activities](#) into practice to secure measurable conservation outcomes. Typical preliminary steps to start implementation include clarifying the roles and responsibilities of potential [stakeholders](#), detailing the legal and institutional aspects of establishing an offset, developing a biodiversity [Offset Management Plan](#) and addressing the long-term financing of the offset.

Offset Implementation Handbook

See [Biodiversity Offset Implementation Handbook](#) (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/oih.pdf).

Offset Management Plan

A management plan for a biodiversity offset that typically includes the following information:

- The offset's management objectives.
- The necessary activities and outputs to achieve management objectives.
- The requisite resources, or inputs, (funding, technical expertise, etc.) to carry out necessary activities and produce outputs.
- Roles and responsibilities.
- Assumptions and risks.
- The means of [monitoring](#) the offset and adapting it to reflect changing conditions.

Offset planner

Those involved in the design and implementation of a biodiversity offset. [Project developers](#) may choose to establish a small group of staff, consultants, local [stakeholders](#) and other experts to assist them in the design of the biodiversity offset. All these people may be termed 'offset planners'.

Offset ratio

The offset 'ratio' is the area occupied by an offset divided by the area affected by a [project's](#) impact. The offset area is often larger than the area impacted (i.e. [offset ratio](#) >1), since the offset gains per unit area are often lower than the [impact site](#) losses per unit area. Use of a [multiplier](#) represents a decision made by an [offset planner](#) to increase the area of an offset by a certain factor, with the aim of improving the chances of achieving [no net loss](#). However, the terms ratio and multiplier are often used interchangeably.

Offset site communities

Communities that are not necessarily affected by any residual biodiversity related impacts of the [project](#) but are involved in or affected by the [offset activities](#).

Offsetable

Impacts on [biodiversity components](#) that are capable of being offset. See [non-offsetable threshold](#).

Opportunity cost

The cost of an economic activity foregone by the choice of another activity.

Out-of-kind

When the biodiversity conserved through the offset differs in kind from the biodiversity impacted by the [project](#). The option of [‘trading up’](#) to an out-of-kind offset may be advisable where an offset arising from project impacts on a common or widespread component of biodiversity may instead be switched to benefit a more threatened or rare component.

Overview Document

See [Business, Biodiversity Offsets and BBOP: An Overview](#).

Participation

Active involvement in decision-making of those with an interest in or affected by important decisions. A process through which [stakeholders](#) influence and share control over development initiatives and the decisions and resources which affect them.

Participatory appraisal

The term participatory appraisal describes a family of approaches that enable local people to identify their own priorities and make their own decisions about the future, with the organising agency facilitating, listening and learning. Participatory appraisal uses visual and flexible tools to ensure that everyone can join in regardless of background.

Participatory Learning and Action (PLA)

Participatory Learning and Action (PLA) is an umbrella term for a wide range of similar approaches and methodologies, including [Participatory Rural Appraisal](#) (PRA), Rapid Rural Appraisal (RRA), Participatory Learning Methods (PALM), Participatory Action Research (PAR), Farming Systems Research (FSR), Méthode Active de Recherche et de Planification Participative (MARPP), and many others. The common theme to all these approaches is the full [participation](#) of people in the processes, of learning about their needs and opportunities, and in the action required to address them

Participatory Rural Appraisal (PRA)

An approach to assessing rural contexts which aims to involve local communities in the generation of the information through consultation and active involvement of community members in techniques such as resource mapping, social mapping and resource prioritisation.

Payments for ecosystem services (PES)

An umbrella term often applied to any among a wide variety of schemes in which the beneficiaries, or users, of [ecosystem services](#) provide payment to the stewards, or providers, of ecosystem services. PES are mechanisms that give land managers incentives to protect or enhance the provision of ecosystem services, such as water, biodiversity, and carbon storage. In some cases the beneficiaries of these services, for example industrial water users, pay land managers or provide the funds to reimburse land owners for undertaking land management that produces a desired outcome. In others, payments are made by governments or [NGOs](#) or donors on behalf of users or society in general / as a whole. In a third type of PES, more common in developed countries, the government creates a market through regulation allowing trading in emission reductions or in compensatory [mitigation](#) requirements. The key feature of PES is that payments made are conditional on landowners carrying out the contractually agreed conservation or land management activities.

Perpetuity

Endless or indefinitely long duration or existence.

Persistence

A measure of ongoing existence, or the opposite of [extinction](#). In the context of biodiversity, persistence implies absence of threats and an expectation of continued existence over the timeframe under consideration. [Threat status](#) categories (e.g. the [IUCN Red List](#)) are one important way of describing expectations of persistence. Indices of 'susceptibility to loss' offer a continuous (c.f. categorical) description of persistence expectation. In conservation biology 'persistence' is often expressed as a [persistence probability](#).

Persistence probability

Persistence probability is a measure (between zero and one) of the likelihood that a specified component of biodiversity (usually a species or species' population) will exist (i.e. not be extinct) after a defined time interval. Persistence probability is a key outcome measure for [population viability analysis](#) (PVA) and the term is commonly used in the context of PVA. Increased persistence probability is also the primary goal of threatened species, community and ecosystem conservation efforts. Net conservation gain implies increased persistence probability for affected biodiversity components.

Pilot Project

See [BBOP pilot project](#).

Plan

A detailed proposal, scheme, programme, or method worked out beforehand for the accomplishment of an objective.

Plan-making authority

The authority that writes the [plan](#) or [project](#).

Polluter pays principle

A principle in environmental law according to which the polluting party pays for the damage done to the natural environment.

Population and Habitat Viability Analysis (PHVA)

A PHVA is a model-based analysis based on an exhaustive compilation, evaluation, and synthesis of data to build a framework for conservation actions based on predicted population trends and [persistence](#) into the long term. It provides an in depth examination and synthesis of what is known of a species' life history, ecology, management, and other factors to determine courses of action to manage for viable populations.

Population Viability Analysis (PVA)

PVA is a species-specific method of risk assessment frequently used in conservation biology. It is traditionally defined as the process that determines the probability that a population will go [extinct](#) within a given number of years. More recently, PVA has been described as a marriage of ecology and statistics that brings together species characteristics and environmental variability to forecast population health and extinction risk. Each PVA is individually developed for a target population or species, and consequently, each PVA is unique. The larger goal in mind when conducting a PVA is to ensure that the population of a species is self-sustaining over

the long term. Population viability analysis is used to estimate the likelihood of a population's extinction, indicate the urgency of recovery efforts, and identify key life stages or processes that should be the focus of recovery efforts. PVA is also used to compare proposed management options and assess existing recovery efforts. PVA is frequently used in endangered species management to develop a plan of action, rank the pros and cons of different management scenarios, and assess the potential impacts of habitat loss. Debates exist and remain unresolved over the appropriate uses of PVA in conservation biology and PVA's ability to accurately assess extinction risks. (See also [Viable population](#)).

Potential offset site / Potential offset area

An area of land (or sea) that a biodiversity [offset planner](#) has identified to be possibly suitable as the location for [offset activities](#) that could result in [conservation gains](#) of biodiversity components that would be suitable in kind and adequate in scale to achieve [no net loss](#) or a [net gain](#) of biodiversity (either alone or in combination with other areas), and thus worthy of more detailed investigation.

Precautionary principle

As phrased in the Rio Declaration, the precautionary principle states that “Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation”.

Primary impact

See [Direct impact](#).

Principles on Biodiversity Offsets

See [BBOP Principles on Biodiversity Offsets](#).

Production function method

A valuation method that estimates the value of an [ecosystem service](#) by examining its contribution to production of marketed goods. It estimates the physical effects of changes in the environment on economic activity and then values the resulting changes in production and consumption.

Project

A development project whose [residual impact](#) on biodiversity is being offset

Project lifecycle

See [Lifecycle](#).

Protected area

An area of land and / or sea especially dedicated to the protection and maintenance of [biological diversity](#), and of natural and associated cultural resources, and managed through legal or other effective means.

Proxy

A measurable (sometimes quantifiable) and practical parameter that can be used as a substitute for a parameter that is too difficult (sometimes impossible) or expensive to measure directly. See also [surrogate measures](#).

Proxy measures

Biodiversity [metrics](#) are often described as ‘surrogate’ or ‘proxy’ measures just because it is impossible to (a) inventory and (b) assess the state of all biodiversity present. Even at the plot scale, it is not technically possible to fully count all life forms present. Nor is it possible to know with certainty the true value of a state or [condition](#) metric. It is therefore necessary to rely on either on samples or on selected [indicators](#) of the biodiversity present as proxies to represent the biodiversity present and its condition or [state](#).

Ratio

See [Offset ratio](#).

Reconstruction

Refers principally to the re-creation of a [habitat](#) or ecological community from ‘scratch’, normally from bare ground or even from a subsoil substrate.

Red Data Books

Red Data Books were the forerunners to the [IUCN Red List of Threatened Species™](#). The global ‘book’ has now been released as the Red List. Many countries continue to publish national Red Data Books, which represent regional assessments of [vulnerability](#). Each Red Data Book usually deals with a specific group of animals or plants for a region (for instance, reptiles, insects or mosses).

Rehabilitation

Rehabilitation implies putting the [landscape](#) to a new or altered use to serve a particular human purpose such as altering a degraded [habitat](#) in order to improve ecological function.

The Relationship between Biodiversity Offsets and Impact Assessment: a BBOP Resource Paper

See [Resource Paper on the Relationship between Biodiversity Offsets and Impact Assessment](#).

Replacement cost method

A valuation method that generates a value for the benefits of an environmental good or service by estimating the cost of replacing the benefits with an alternative good or service.

Residual impact

The remaining adverse impact on biodiversity after appropriate [avoidance](#), minimisation and [rehabilitation](#) measures have been taken according to the [mitigation hierarchy](#).

Resilience

The ability of an ecosystem to recover and maintain diversity, integrity and ecological processes following disturbance.

Resistance

The ability of an ecological community to absorb or buffer the amplitude of an exogenous disturbance.

Resource Paper on Biodiversity Offsets and Stakeholder Participation

This BBOP resource paper provides information on stakeholder identification, engagement and participation in the design and implementation of biodiversity offsets, considering both the benefits and challenges inherent in

an inclusive and participatory approach. Issues that are still under debate are reviewed, and suggestions and source material are provided to help guide [offset planners](#). Available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/participation.pdf.

Resource Paper on the Relationship between Biodiversity Offsets and Impact Assessment

This BBOP resource paper offers information on how to integrate biodiversity offsets with impact assessment, including strategic environmental assessment (SEA) for policies, plans and programmes and Environmental Impact Assessment (EIA) for proposed projects. Available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/eia.pdf.

Restoration

Altering an area in such a way as to re-establish an ecosystem's composition, structure and function, usually bringing it back to its original (pre-disturbance) state or to a healthy state close to the original. Restoration differs from [rehabilitation](#) in that restoration is a holistic process not achieved through the isolated manipulation of individual elements. While restoration aims to return an ecosystem to a former natural condition, rehabilitation implies putting the [landscape](#) to a new or altered use to serve a particular human purpose.

Revolving (recurrent) fund

A revolving, or recurrent, fund disburses funds to projects on a loan basis. Revolving funds provide money and expect repayment based on established terms (e.g. interest rate, time period for repayment, etc.) The loan may be heavily subsidised, in which case the revolving fund behaves similarly to a [sinking fund](#) or money can also be lent on market terms, allowing the fund to maintain its value and act more like an [endowment](#). Disbursement mechanisms can be versatile and the funds can also be topped up from a variety of sources to replenish or augment the original capital of the fund and provide a continuing source of money for ongoing activities.

Scoping

The process of deciding the scope and level of detail of a process such as a [Strategic Environmental Assessment](#) or an [Environmental Impact Assessment](#), including the environmental effects and [alternatives](#) which need to be considered, the assessment methods to be used, and the structure and contents of the Report.

Screening

A process of narrowing down alternatives or options by testing or assessing policies, plans, projects, areas of land or sea or biodiversity components in order to identify those with particular characteristics or which meet particular criteria. In the context of biodiversity offsets, the term is likely to refer to the process of deciding whether a plan or programme requires [SEA](#), whether a project requires [EIA](#), or assessing [potential offset sites](#). EIA laws and regulations often include a formal requirement for screening.

Secondary impacts

See [Indirect impacts](#).

Secretariat

From 2004 – 2008 the BBOP Secretariat included Forest Trends, Conservation International and the Wildlife Conservation Society. Together, the three organisations are responsible for the coordination and administration of BBOP as a programme.

Significant Environmental Benefit Methods

A set of methods developed in South Australia based upon the premise that the clearance of native vegetation will result in the further loss (even temporary) of [habitat](#), biodiversity and environmental values in a [landscape](#) that has been substantially modified by European settlement. In order to compensate for that loss, an operator or individual who wishes to clear native vegetation must establish a process to protect and manage the biodiversity in that region over and above that lost. This is analogous to providing [compensation](#) to a landowner for temporary or permanent loss of productivity of agricultural land. A guide to how a SEB might be achieved is provided by provisions in the Native Vegetation Act that relate to applications to clear land (see Appendix A.8 in the Biodiversity Offset Design Handbook Appendices) (available at www.forest-trends.org/biodiversityoffsetprogram/guidelines/odh-appendices.pdf).

Similarity Indices

These measure similarity between biological communities based on the combination of biological (e.g. species) and sometimes [abiotic](#) (e.g. landform, climate) features associated with these biological communities. Values typically range from 0 to 1 with the higher value suggesting greater similarity.

Sinking fund

A sinking fund is designed to disburse its entire principal and investment income over a fixed period of time, ultimately sinking the fund to zero. When a sinking fund is set up for a relatively short-term, it operates more like typical project financing. However, many sinking funds are established to address longer term funding goals and usually operate for a relatively long period (e.g. 15 years or more).

Site endemic

[Endemic](#) species are species which occur naturally only in the area or location being assessed. A single-site endemic is a species or sub-species known only to occur on one site. It is questionable whether a [residual impact](#) of any severity on a single site endemic would be possible to offset.

Small biodiversity based enterprise

A small enterprise (defined by the European Union as an enterprise employing fewer than 50 persons and having an annual turnover and / or balance sheet total which does not exceed €10 million) that is dependent on biodiversity for its core business and which contributes to [biodiversity conservation](#) through that core business.

Social license to operate

The approval or the broad acceptance of society (or some relevant sub-section, such as affected local communities) with respect to a [project developer](#) conducting its activities. A social licence is not a legal requirement *per se*, but an increasingly important aspect of addressing socioeconomic-related risks to planning and implementing a successful project.

Species diversity

The variety of different species within genera, families, orders, classes and phyla represented and relative abundance of each within an ecological community, assemblage or ecosystem.

Stakeholder Participation Plan

A plan that forms the basis for an ongoing [participation](#) strategy that is revisited on a regular basis during design and implementation. The plan should enable [project developers](#) to understand at an early stage the full

range of [stakeholders](#) that could affect the project and to develop approaches for engaging these various interests.

Stakeholders

Stakeholders include persons or groups who are directly or indirectly affected by a [project](#) and / or offset, as well as those who are interested in a project and / or offset and have the ability to influence its outcome, either positively or negatively. They include persons or groups who hold rights over land and resources in the area of the project and offset. Stakeholders can include, but are not limited to, indigenous peoples, local communities, non-governmental organisations and members of scientific bodies such as university departments and research institutes, local and central government, customers, shareholders, management, employees and suppliers.

State metrics

The state of biodiversity components, assessed by comparing the observed biodiversity with some notion of what it would be in the absence of abnormal threats. The state [metric](#) is most simply expressed as a fraction or percentage reflecting the intactness or [condition](#) of the biodiversity component. For a species, this might be the % sites holding a species (from presence observation data); % of natural abundance (from basic counts); % former [habitat](#) area now remaining (area occupied). At higher levels of organisation (i.e. community, ecosystem) state is reflected by measures of '[condition](#)'. These may be species-occupancy based (number actually present expressed as a percentage of the number that could be present), pressure based (number and intensity of threats) or based on measures of structure and function (intactness of key [attributes](#)).

Stated preference methods

A group of valuation methods including [contingent valuation](#) and [choice experiments](#), which estimate values by asking respondents about their preferences.

Stochastic

A stochastic process, also referred to as a random process, is a process with an unpredictable outcome, regardless of how well the starting conditions are known.

Strategic Environmental Assessment (SEA)

The formal process of ensuring that environmental consequences of certain public sector plans and programmes are identified and assessed during their preparation and before their adoption. SEA is undertaken at earlier stages or higher tiers of planning and decision-making than take place for a project through [Environmental Impact Assessment](#). In the EU, the SEA procedure is governed by the SEA Directive 2001/42/EC.

Surrogate

See [Proxy](#).

Surrogate market methods

A group of valuation methods including [hedonic pricing](#) and the [travel cost method](#) which estimate value by examining people's behaviour in a related market.

Surrogate measures

Some biodiversity [metrics](#) are described as ‘surrogate’ or ‘proxy’ measures because it is impossible to assess the state of all biodiversity for an area. It is therefore necessary to rely on selected surrogate measures to represent the state of biodiversity for an area. Thus [state metrics](#) and [condition](#) metrics are usually surrogates for the information on biodiversity that is really required.

Sustainability Appraisal

An appraisal of the economic, environmental and social effects of a [plan](#) from the outset of the preparation process to allow decisions to be made that accord with sustainable development

Sustainable development

Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable use of biodiversity

The use of components of [biological diversity](#) in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

Synthetic benchmark

A created (or ‘virtual’) [benchmark](#) used where no representative benchmark site is available in the field. The creation of such a benchmark may require the use of historical written information and images, relict species, information from best available sites and known ecological relationships to describe the likely prevalence and features of key [attributes](#) (biodiversity units or [surrogates](#) thereof).

Taxon (taxa)

A taxon (plural: taxa), or taxonomic unit, is a unit of any rank (i.e. kingdom, phylum, class, order, family, genus, species) designating an organism or a group of organisms.

Tenure

With respect to land, the right to exclusively occupy and use a specified area of land. Tenure may also be limited to certain resources (‘resource tenure’) such as timber but not to all resources in a given area. Tenure may be held by individuals, communities, government or corporations.

Threat status

Threat status (of a species or [community type](#)) is a simple but highly integrated [indicator](#) of [vulnerability](#). It contains information about past loss (of numbers and / or [habitat](#)), the number and intensity of threats, and current prospects as indicated by recent population growth or decline. Any one of these [metrics](#) could be used to measure vulnerability. One much used example of a threat status classification system is the [IUCN Red List of Threatened Species](#).

Thresholds

Boundary conditions between two or more different states. In the context of biodiversity offsets, one of the key ‘thresholds’ considered is the level beyond which impacts on biodiversity may no longer be capable of being offset (see [non-offsetable threshold](#)).

Tiering

The linking of assessments for policies, [plans](#), programmes and [projects](#) to achieve a logical hierarchy and avoid unnecessary duplication of assessment work.

Time discounting

A method used to account for the situation when the [project](#) impacts and / or the offset costs and benefits vary over time and to take into account that the further into the future the costs (or benefits) occur the less they are likely to be worth in comparison to costs (or benefits) occurring now. Time discounting makes the net benefits in each year comparable to the present year.

Tradable

See [Non-tradable](#)

Trading up

Conserving through an offset components of biodiversity that are a higher conservation priority (for example because they are more irreplaceable and vulnerable) than those affected by the development [project](#) for which the offset is envisaged.

Travel cost method

Valuation method which estimates the [willingness to pay](#) for a recreational site by examining the costs that individuals incur to visit the site such as travel time, transport costs, entrance and parking fees.

Trust fund

These are available in some countries with legal systems based on UK or US models, while other countries (particularly those with a [civil law](#) system) may not have relevant laws on trusts or charities. A [conservation trust fund](#) is a funded, tax-exempt organisation to support particular conservation activities in [perpetuity](#).

Use values

Utilitarian values people attach to biodiversity associated with its practical use to provide jobs, food, medicines, materials, energy etc.

Verification

The act of reviewing, inspecting, testing, checking, auditing, or otherwise establishing and documenting whether items, processes, services, or documents conform to specified requirements. In the case of a biodiversity offset, verification could involve establishing that the planned and predicted biodiversity outcomes of the offset have been achieved. Verification can be undertaken by the [developer](#), by a second party (a contractor or partner) or a third party (an independent institution or individual).

Viable population (biology)

A self-supporting population with sufficient numbers and genetic variety among healthy individuals and breeding pairs that are well enough distributed to ensure a high probability of survival despite the foreseeable effects of demographic, environmental and genetic events, and of natural catastrophes.

Virtual benchmark

See [Synthetic benchmark](#).

Vulnerability

Vulnerability indicates risk of imminent loss and so reflects irreplaceability over time. Measures of vulnerability are based on features that indicate risk of impending loss. As a general rule, components which are isolated and rare and have long generation times and low mobility are more vulnerable. The conservation significance of a component of biodiversity (be it a species, community or ecological process) is influenced by its vulnerability to threats. Vulnerability may be measured on a site basis (likelihood that the species will be locally [extirpated](#) from a site) or a species-basis (likelihood that the species will go globally [extinct](#)). There are a number of ways of classifying components of biodiversity according to vulnerability criteria. [Threat status](#) (of a species or community type) is a simple but highly integrated indicator of vulnerability. It contains information about past loss (of numbers and / or habitat), the number and intensity of threats, and current prospects as indicated by recent population growth or decline. Any one of these metrics could be used to measure vulnerability

Weighting

The fractional values used to reflect the relative importance of each of several [attributes](#). In the context of biodiversity offsets, weights are used to ensure the various attributes (proxies) measured when combined, better reflect the health of the overall ecosystem. Attributes reflecting many important ecological processes (e.g. light, water use, temperature, food, shelter) for many species will be strongly weighted. Attributes that only influence one or a few processes (e.g. food) affecting one or a few species should be weighted less. The individual weights for all attributes should add up to 1 (or 100%).

Widespread biodiversity

Widespread biodiversity is defined as biodiversity components which do not meet the minimum requirement to be considered [concentrated](#).

Wilderness

A wild and uninhabited area left in its natural condition; a natural environment on Earth that has not been modified by human activity.

Willingness to accept

The amount of money (or goods or services) that an individual is willing to accept as [compensation](#) for giving up goods and services e.g. through changing to sustainable land management practices.

Willingness to pay

The amount of money (or goods or services) that an individual is willing to pay for a good or service.

WWF Global 200 ecoregions

The Global Ecoregions is a science-based global ranking of the Earth's most biologically outstanding terrestrial, freshwater and marine [habitats](#). Developed by WWF scientists in collaboration with regional experts around the world, the aim of the Global Ecoregions analysis is to ensure that the full range of ecosystems is represented within regional conservation and development strategies, so that conservation efforts around the world contribute to a global biodiversity strategy (see http://www.panda.org/about_our_earth/ecoregions).

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To learn more about the BBOP principles, guidelines and optional methodologies, go to:
www.forest-trends.org/biodiversityoffsetprogram/guidelines