Guidelines for the Appropriate Use of the IUCN Red List for Business

Version 1.1 (July 2022)
[updated version to fix broken links]

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This guidance summarises how the International Union for Conservation of Nature (IUCN) Red List of Threatened Species (hereafter, the IUCN Red List; www.iucnredlist.org) can help inform business decision-making. It is aimed at environmental managers, consultants, NGOs and regulatory bodies working in all sectors of industry and in finance. The guidance outlines key applications of Red List information, including impact assessment and mitigation planning, and how common pitfalls can be avoided.

I. What is the IUCN Red List?

The primary purpose of the IUCN Red List is to catalogue and highlight species that face global extinction risk. However, despite its name, The IUCN Red List of Threatened Species™ does not only include threatened species, but also information on non-threatened species. Currently, the Red List provides assessments of extinction risk for over 80,000 individual species. A Red List assessment uses objective criteria to place each species into one of eight IUCN Red List Categories. The Red List criteria use information such as global population size, rate of population decline, area of geographic distribution, and distribution fragmentation (IUCN 2012).

The Red List Categories (Figure 1) are:

Extinct – no known individuals remaining;

Extinct in the Wild – known only to survive in captivity, or as a naturalized population outside its historic range;

Critically Endangered (CR) – extremely high risk of extinction in the wild

Endangered (EN) – high risk of extinction in the wild

Vulnerable (VU) – medium risk of extinction in the wild;

Near Threatened (NT) – likely to become threatened in the near future;

Least Concern (LC) – lowest risk (but note that many such species may still be declining);

Data Deficient (DD) – not enough data to make an assessment of its risk of extinction.
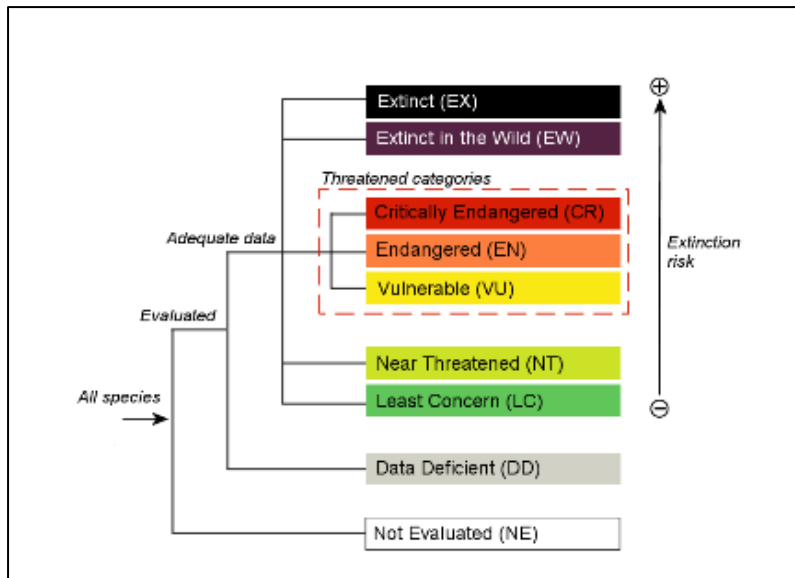
Figure 1. Structure of the IUCN Red List Categories.

Red List assessments include a rationale summarising the assessment, the Red List Category, and supporting data (which may be quite extensive in some cases, less so in others) on species' population size and trend, distribution, habitat preferences, threats and conservation actions in place or needed.

The Red List draws on a global expert network (>10,000 experts) for information, assessment, and review. This includes the IUCN Species Survival Commission and a suite of Red List Partner organisations, co-ordinated by the Red List Unit in the IUCN Secretariat. The individuals or organizations involved in this process are named in the assessment documentation. The Red List website is updated several times per year, with both new assessments as well as with updates to some existing assessments.

The Red List is thus much more than a list of species and threat status. It is an important mechanism for compiling, synthesising, disseminating and updating species-related data.

The Red List is one of a suite of inter-related biodiversity knowledge products that are compiled by a broad range of partners and collaborators, and delivered through IUCN. These also include the Red List of Ecosystems, Protected Planet (powered by the World Database on Protected Areas) and Key Biodiversity Areas (see Appendix I).

II. Accessing the IUCN Red List

The full set of Red List data including species distribution maps can be accessed for commercial use through the Integrated Biodiversity Assessment Tool (IBAT - https://www.ibat-alliance.org/). Note that full acknowledgement and citation (including reference to the version of the IUCN Red List Data used) should be provided; relevant citation details are provided with each dataset.

In addition to the global IUCN Red List, many national and regional Red Lists exist. IUCN has developed guidelines for undertaking species assessments at a sub-global scale. However, national and regional Red List processes are not overseen by IUCN, may or may not follow the IUCN guidelines or even the IUCN Categories and Criteria, and may or may not include or require the same minimum documentation standards as those on the global IUCN Red List. Many national/regional Red Lists are available on the website of the National Red List working group (https://www.nationalredlist.org/) or on the Red List website (https://www.iucnredlist.org/resources/grid - search under Books). See Section V for caveats in using information from national/regional Red Lists.

III. Using the IUCN Red List

The IUCN Red List is a key dataset for informing business decisions and reporting, related to biodiversity management.

The Red List can be used to provide information on potential risks and opportunities including:

- **Project-level decision-making** and priority setting (for projects that may impact biodiversity) including screening for potential presence of threatened species, impact avoidance design, baseline survey design, application of the mitigation hierarchy, biodiversity action plan development, offset design and implementation, and monitoring and evaluation.

- **Assessment and reporting** along supply-chains or at business level, including Natural Capital Accounting (e.g. the Natural Capital Protocol (Natural Capital Coalition 2016)).

- **Alignment with environmental standards and safeguards** including government Environmental and Social Impact Assessment (ESIA) policies and financial performance standards (e.g. the International Finance Corporation's Performance Standard 6 (PS6)).

III.1 Project-level decision-making

Red List data can be used to help identify, manage, and reduce the negative impacts of development projects across a range of sectors (e.g. agriculture, infrastructure, extractives, and energy) on biodiversity and ecosystem services. These data can be used in the implementation of the mitigation hierarchy to anticipate and avoid, minimize, rehabilitate or restore, and offset impacts (Figure 2).
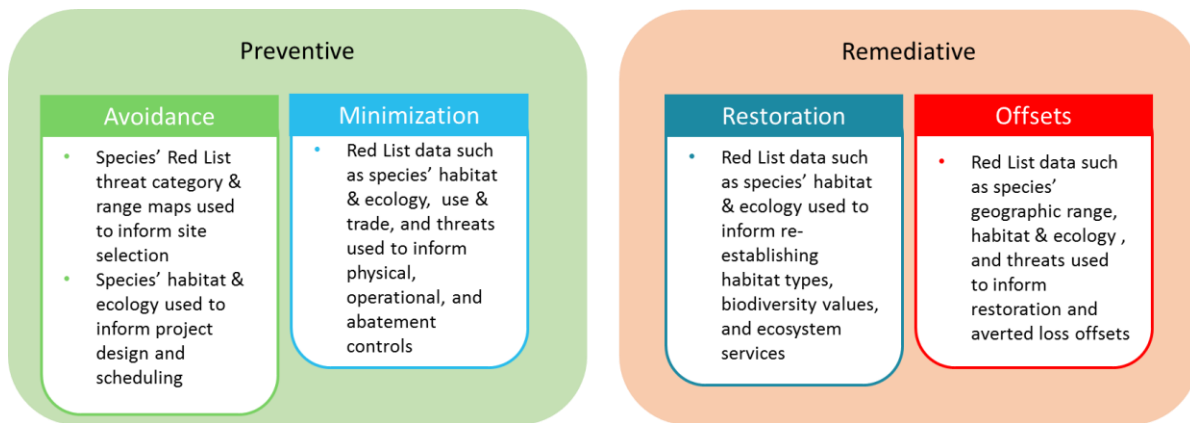
Figure 2. Schematic diagram showing how IUCN Red List data can be used in the implementation of the mitigation hierarchy.

Red List data help inform key stages in project decision-making (Figure 3). These include:

Screening and scoping risk: Before investment in exploration permits or development of projects, companies often screen potential project sites for biodiversity risk, alongside other factors such as social or security risk. The Red List species' range maps and assessment information are valuable for early assessment and identification of potential biodiversity risk, at a stage where up-front avoidance, such as alternative project siting, is still possible. For example, in IFC's PS6, the presence of Endangered or Critically Endangered species may qualify an area as 'Critical Habitat', with specific stipulations for the project. Critical Habitat screening for a project site could use IUCN Red List species range maps to identify if Endangered or Critically Endangered species were likely to be present. Red List information on range size and migratory status can be used to assess qualification under other PS6 criteria. Another example is that the presence of threatened species and ecosystems may qualify an area as High Conservation Value (HCV).
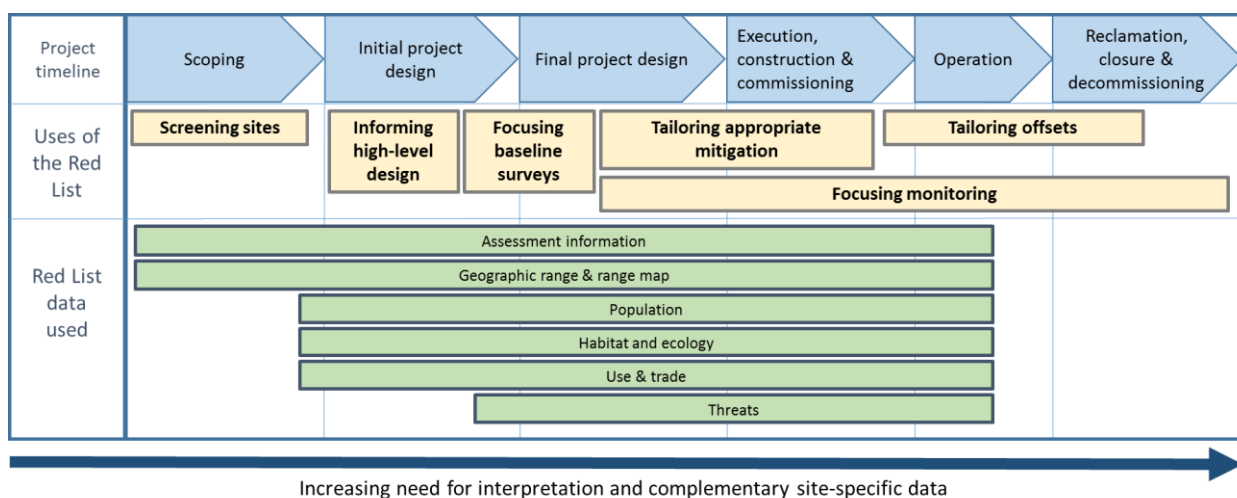
Figure 3. Generalised schematic of the use of the IUCN Red List by industry for project decision-making (may vary per sector). As design and implementation progress, there is likely to be increasing need for site-specific data to be collected and for additional analysis and interpretation of Red List information.

Prioritising and guiding baseline surveys and monitoring: Once a project concept is chosen and investment funding becomes available, an environmental and social impact assessment is required. At this point companies will frequently contract extensive baseline surveys to fill gaps in knowledge identified during initial screening and scoping. The Red List is an invaluable tool for prioritising where biodiversity survey effort will be most effective. Priorities for survey could be

- To refine knowledge of the distribution of threatened or restricted-range species known to be in a project area

- To assess the actual status of species that the Red List indicates might be present

- To improve understanding of the status of species that are classed as Data Deficient (this is not always seen as a task for business but important for a realistic understanding potential risk)

Focusing surveys in this way can reduce costs, optimise filling of data gaps, and address biodiversity risks more effectively.

Screening/scoping and *baseline surveys* inform *initial project design,* which offers the biggest opportunities for avoidance of impacts on priority species identified using the Red List. For example, this might allow re-routing of planned roads or re-siting of processing plants that would otherwise impact on highly threatened species.

Impact analysis and assessment, mitigation planning: Through screening, initial project design and baseline surveys, the Red List can help identify priorities for detailed impact assessment and mitigation planning. Red List information helps to highlight existing threats and how these might be exacerbated by project impacts: e.g., unsustainable harvesting of bushmeat species could be worsened by an influx of work-seekers.

Red List information on ecology and behaviour may also point to how potential impacts can be mitigated (e.g., avoiding seismic activity seasonally when a sensitive cetacean species migrates through the project area) or where further assessment of species' sensitivities is needed (e.g., migratory freshwater fish in the context of hydropower dams).

The Red List is a key information source for such assessments, but supplementary information is frequently needed. For instance, to assess against the quantitative thresholds used in PS6 and similar safeguard frameworks, the relatively broad-brush Red List range maps available for most species may need to be refined through modelling and mapping the extent of suitable habitat, using land cover data, and perhaps even refined further through

consultation with taxon experts, to give more realistic estimates of the percentages of range covered by the project study area.

Identifying potential offsets: Information on the wider distribution and status of species helps selection of potential offset sites, and in producing standardised metrics such as Units of Global Distribution (based on proportion of global population or range) (Temple *et al.* 2012). Information on threats and recommended conservation actions coming from the Red List may also inform management interventions and priorities for monitoring.

III.2 Business-level decision-making

Driven by investor and public concerns, businesses are increasingly adopting 'non-financial reporting' to provide a fuller picture of business performance and impacts alongside financial accounts. The Red List, as one of a handful of global standards for biodiversity assessment, features strongly in non-financial reporting frameworks, including The Global Reporting Initiative (GRI 2013). Although the Red List is included in these frameworks, it may be more useful to consider reporting on how businesses are impacting on species positively or negatively (for example, species accounting (UNEP-WCMC 2016)) rather than just the overlap with Red Listed species. More broadly, non-financial assessment is increasingly focused on the concept of 'natural capital'. Natural capital assessment and accounting has many potential applications, but a key interest for many businesses is understanding and managing risks in supply chains. Methods and metrics for natural capital assessments are still evolving and the Red List is likely to figure centrally in the biodiversity part of these assessments (Bolt *et al.* 2016). Added to this the Red List Index is listed in the official indicator framework for the 17 Sustainable Development Goals (SDGs). There is on-going discussion around corporate accountability in the context of private sector contributions to solving sustainable development challenges.

III.3 Environmental standards and safeguards

Environmental standards and safeguards aim to prevent and mitigate undue harm to the environment at the earliest possible planning stages. The growing application of such safeguards reflects rapidly increasing national and international awareness of the need for effective environmental sustainability. The Red List is a key data source for the application of these standards and safeguards (UNEP-WCMC 2011; Table 1)[1].

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[1] UNEP-WCMC (2011) found that the Red List Categories were used in over half of 36 standards assessed. Juffe-Bignoli (2014) also provides numerous examples of how the Red List is used in standards & safeguards.

Table 1. Examples of the use of IUCN Red List data within sustainability frameworks across different business sectors

Standard/safeguard	Red List data use
Agriculture	
Roundtable on Sustainable Palm Oil's (RSPO) *Principles and Criteria for the Production of Sustainable Palm Oil* (2013)	Used to support determination of the biodiversity value of a forest and requires forest managers to pay particular attention to threatened species (Principle 5.2)[2]
Forestry	
International Tropical Timber Organisation's (ITTO)/IUCN *Guidelines for the Conservation and Sustainable Use of Biodiversity in Tropical Timber Production Forests* (2009)	Used to support determination of appropriate management action, based on the presence of threatened species (Principle 2, guidelines 3 and 4)
Forest Stewardship Council (FSC) Forest Management Standards	Used to determine the type of High Conservation Value (HCV) Forests as part of early assessment
International Finance Institutions	
The International Finance Corporation's (IFC) Performance Standard 6 (PS6) on the *Biodiversity Conservation and Sustainable Management of Living Natural Resources* (2012)[3]	Used to support determination of the biodiversity value of an area, with stringent requirements for operating in areas that contain significant numbers of threatened species to ensure projects do not lead to a net reduction in their population (paragraphs 16-19); Encourages consultation with IUCN species experts to evaluate unlisted species based on

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[2] Threatened species refers to species listed as one of the three threatened categories: 'Critically Endangered' (CR), 'Endangered' (EN) and 'Vulnerable' (VU) on the IUCN Red List. In many cases, the Red List will also be used to assess species that have a restricted range, are endemic to a region or country, are migratory or form congregations.
[3] Equator Principles Financial Institutions also voluntary apply PS6.

	Red List Criteria (Guidance Note 69 & 78).
European Bank for Reconstruction and Development's Performance Requirement 6 on *Biodiversity Conservation and Sustainable Management of Living Natural Resources* (2014)	Draws from IFC PS6 guidelines for determining the biodiversity value and implications of operating in an area, based, in part, on the presence of threatened species (paragraphs 14-18).
European Investment Bank's *Statement of Environmental and Social Principles and Standards* (2009)	Identifies the biodiversity value of an area based, in part, on the presence of threatened species. The bank does not fund project's operating in these areas where there are negative impacts (paragraph 71).
The World Bank's *Environmental & Social Safeguards* (ESS) (2016)	The revised 2016 ESS aligns closely with IFC PS6 requirements for biodiversity.
Asian Development Bank's *Safeguard Policy* (2009)	Used to determine the biodiversity value of an area. Projects must not lead to a net reduction to the threatened species for which it was designated (paragraph 28).
Inter-American Development Bank's *Environment and Safeguards Compliance Policy* (2006)	Used to determine the biodiversity value of an area based, in part, by the presence of habitats crucial for threatened and near-threatened species. The Bank will not support operations that significantly convert or degrade such habitats (clause B9 4.23).

IV. Dynamism in the IUCN Red List

The Red List is subject to change. On an on-going basis, new assessments are added, increasing taxonomic and geographic coverage. New or updated information (including spatial information) is also added to existing assessments. To keep the Red List current, the aim is that every species will be re-assessed at least once each 10 years after which assessments technically are flagged as out of date. However, some species are assessed more frequently.

The threat category assigned to a species may change for several reasons:

- Changing knowledge, as new information becomes available on a species that previously was not available, thereby changing understanding of a species' conservation status

- Changing taxonomy (e.g. taxonomic review may split a species into two or more new species, or lump two or more species together)

- Changing threats: the actual conservation status of a species may deteriorate or improve. This could be because of general or site-specific threats, or because of effective conservation action.

Business decisions that are informed by the Red List may clearly be sensitive to such changes. Where knowledge of a species is poor, or the assessment does not take into account recent new threats, further targeted survey or research work may often be a sound project investment. This can help improve certainty about a species' status. Quite often, poorly-known species turn out to be more widespread and abundant than previously thought, reducing the risks that a project needs to manage.

A number of measures are in place to reduce volatility in the Red List through changing knowledge and taxonomy. These include:

- Rigorous peer and expert review

- Adoption of standard taxonomic references, and critical evaluation of proposed changes

- Training for Red List assessors

At the same time, the Red List remains sensitive to genuine change in species' status through the contributions and expertise contained in its vast support network comprising over 130 Specialist Groups and Red List Authorities, 10,000 members of the IUCN Species Survival Commission, and the Red List Partnership.

V. Steering clear of pitfalls

Valuable as it is, the Red List has limitations and needs careful interpretation. It is advisable to seek expert guidance, e.g. from specialist consultants, when using the Red List to inform decisions.

There are a number of caveats to bear in mind (this is not an exhaustive list):

- **Many species are yet to be assessed**: there are perhaps as many as 1.9 million described species, and only ~82,000 have been assessed as of October 2016. The fact that a species does not appear on the Red List does not mean it may not be threatened with extinction. Red List coverage is best for vertebrates, for temperate regions and for terrestrial species; coverage is still relatively poor, but improving, for freshwater species in Latin America and many parts of Asia, and generally for plants and invertebrates. How up-to-date and comprehensive the information is also varies considerably across species and across taxonomic groups. The Red List aims to include assessments for a more representative set of 160,000 species by 2020.

- **Risk of extinction is only one aspect of conservation priority.** Species may be important to key stakeholders for many other reasons, including because they are seen as flagships or charismatic or because they provide key ecosystem services. Red List species accounts do not always reference these values. Increasingly the assessments do include information on use and trade, and sometimes on ecosystem services provided, although the latter is not consistently documented.

- The criteria should always be used in conjunction with the categories. The criteria are expressed in the syntax after the category (E.g. VU B1ab (iii)). These **criteria can provide important contextual understanding**, especially to understanding why a widespread, long-lived species with relatively large populations might be listed in the same category of threat as a more narrowly distributed species with a small population size.

- **The IUCN Red List global dataset covers global threat status. National or regional conservation status may be as important to many stakeholders**, and national and regional Red Lists can provide detailed and very useful information. However, unlike global Red List assessments, national or regional Red Lists may not be rigorously reviewed, and some may use non-standard criteria. On the other hand, some national Red Lists may be of even higher quality and be more up-to-date than the global Red List assessments. Therefore, the reliability of national or regional Red Lists should be carefully evaluated before use (e.g. their use of peer-review, expert consultation, and application of IUCN criteria)

- **Red List assessments may be scale-dependent.** For example, a species that is listed as Least Concern globally could be assessed as Vulnerable in a particular country or region. Because of the nature of some Red List criteria (e.g. relating to rapid population decline), the reverse is also sometimes true: a species could be listed in a lower threat category nationally/regionally, but listed as threatened globally. Assuming the IUCN Categories and Criteria have been correctly applied, it is usually advisable (and precautionary) to refer to the highest-level threat categorisation.

- **Overlap of a species' range map with the project area does not mean the species definitely occurs in that area.** IUCN Red List maps generally reflect current known limits of distribution of a species, accounting for all known, inferred or projected sites of occurrence. Sometimes, they reflect the detailed pattern of local presence (area of occupancy: AOO). Unfortunately, the distinction between the two is not always clear. The quality and age of range maps also varies considerably between assessments.

- Conversely, **non-overlap of a species' range map with the project area does not mean that the species is definitely absent.** Range extensions are not unlikely for poorly-known species where suitable habitat is present.

VI. Strengthening the IUCN Red List

There is an increasing business demand for comprehensive, reliable and up-to-date biodiversity information to support risk management and sustainability reporting. The Red List provides such information, but itself depends on the extensive sharing of data and expertise. Many data collected by industry during baseline surveys and impact assessments are relevant to the Red List and could contribute greatly to strengthening it. However, such data are often not accessible (because of confidentiality or competition concerns), discoverable (because they are not in public repositories, or have limited documentation) or inter-operable (because they are already aggregated, or do not follow common standards).

More open sharing of data can help avoid major cost inefficiencies for business (e.g. the duplication of survey effort or over-estimation of risk). Every record of a threatened or Data Deficient species available to IUCN Red List authorities improves understanding of the species' true status (and more records most often result in a downgrading of the species' threat status, and lowered company risk). Data availability can help governments and lenders to understand cumulative impacts, conduct strategic impact assessments, and improve spatial planning.

Effective data sharing typically involves submission of species records (at minimum spatial location and date) and relevant meta-data to recognised national or international biodiversity databanks (e.g. the Global Biodiversity Information Facility). Through sharing relevant data, businesses that use the Red List have a great opportunity to strengthen the resource on which they depend, and to improve the information base for effective assessment, management and monitoring of biodiversity. To share such data, the appropriate person to contact is the Red List Authority Coordinator in each taxonomic group. A full directory will appear here:
https://www.iucn.org/our-union/commissions/species-survival-commission/about/become-ssc-member.

VII. References

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VIII. Acknowledgements

Appendix I. The IUCN Red List and other global biodiversity knowledge products delivered through IUCN and Partners

Knowledge Product	Notes	Business applications
1 IUCN Red List of Threatened Species	The presence of threatened species is a criterion for identification of Key Biodiversity Areas (#4), which may be strong candidates for formal Protected Area designation (#5)	Outlined in this report.
2 IUCN Red List of Threatened Ecosystems	IUCN has co-ordinated a consultative process to develop criteria for assessing the threat status of ecosystems. These are now being applied to create a global Red List of ecosystems by 2025	Threatened ecosystems feature alongside threatened species in many environmental safeguards, but have not been assessed via a standard framework until recently. The extent of threatened ecosystems and the ranges of threatened species may often overlap, but with incomplete congruence. The two datasets thus provide complementary information.
3 Key Biodiversity Areas	IUCN has co-ordinated a consultative process to develop criteria for defining Key Biodiversity Areas, sites of global significance for the persistence of biodiversity. These criteria draw on the Red Lists of species and ecosystems, among other information. Many KBAs have already been identified using earlier, non-unified criteria, including over 12,000 Important Bird and Biodiversity Areas and nearly 600 Alliance for Zero Extinction sites. Expansion of KBA identification to fill geographic and taxonomic gaps is underway.	KBAs are likely to be of significant concern to stakeholders, and feature in many environmental safeguards (e.g. as Internationally Recognised Areas in IFC PS6). Global KBA data are managed by the Key Biodiversity Areas Partnership through the Key Biodiversity Areas Database and available for commercial use through the IBAT.
4 Protected Planet *(powered by the World Database of Protected Areas)*	PAs may be set up to protect threatened species, but also for other conservation objectives. IUCN's World Commission on Protected Areas (PAs) recognise six categories of Protected Areas, based on their conservation aims and governance. However, not all countries use the IUCN categories and so all PAs in the database need to be	Protected Areas (and particularly those in Categories I, II and III) are likely to be of significant concern to stakeholders, and feature in many environmental safeguards. Global Protected Area data are managed by UNEP-WCMC through the World Database on Protected Areas (WDPA) and available for commercial use through the IBAT.

	considered in any analyses undertaken. If not protected already, Key Biodiversity Areas are often strong candidates for Protected Area status.	