

Critical Habitat Assessment Methodology

1 Introduction

In accordance with IFC PS6, habitats are divided into modified, natural and critical habitats. Critical habitats can be either modified or natural habitats supporting high biodiversity value, including:

- Habitat of significant importance to critically endangered and/or endangered species (International Union for Conservation of Nature and Natural Resources (IUCN) Red List).
- Habitat of significant importance to endemic and/or restricted-range species.
- Habitat supporting globally significant concentrations of migratory species and/or congregatory species.
- Highly threatened and/or unique ecosystems.
- Areas associated with key evolutionary processes.

PS6 guides how to identify ideally three classes of area based on vegetation condition ('quality' or 'state'), and significance for biodiversity (Table 1). PS6 uses the term 'habitat' to refer to these areas, rather than the actual vegetation within them. These three area classes are (i) **Modified Habitat**; (ii) **Natural Habitat**; and (iii) **Critical Habitat** (with Critical Habitat a subset of Modified and Natural Habitat).

Habitat condition is classified as either Natural or Modified based on the extent of human modification of the ecosystem. Monoculture plantations, agricultural areas and urban areas are usually classed as Modified. Both Natural and Modified Habitats may contain globally important biodiversity values, thereby qualifying as Critical Habitat

Table 1. Habitat Classes

Areas Identified in PS6		Condition of the Area	
		Natural	Modified
High Biodiversity Values	Present	Critical Habitat	Critical Habitat
	Absent	Natural Habitat	Modified Habitat

Since habitat destruction is recognized as a major threat to the maintenance of biodiversity and to assess likely significance of impacts, IFC PS6 requires the following depending on habitat status:

Modified habitats are areas that may contain a large proportion of plant and/or animal species of non-native origin, and/or where human activity has substantially modified an area's primary ecological functions and species composition.

Modified habitats may include areas managed for agriculture, forest plantations, reclaimed coastal zones, and reclaimed wetlands.

Performance Standard 6 applies to those areas of modified habitat that include significant biodiversity value, as determined by the risks and impacts identification process required in Performance Standard 1. The client should minimize impacts on such biodiversity and implement mitigation measures as appropriate.

Natural habitats are areas composed of viable assemblages of plant and/or animal species of largely native origin, and/or where human activity has not essentially modified an area's primary ecological functions and species composition.

The client will not significantly convert or degrade natural habitats, unless all the followings are demonstrated:

- No other viable alternatives within the region exist for development of the project on modified habitat;
- Consultation has established the views of stakeholders, including Affected Communities, with respect to the extent of conversion and degradation; and
- Any conversion or degradation is mitigated according to the mitigation hierarchy.

In areas of natural habitat, mitigation measures will be designed to achieve no net loss of biodiversity where feasible. Appropriate actions include the followings:

- Avoiding impacts on biodiversity through the identification and protection of set-asides;
- Implementing measures to minimize habitat fragmentation, such as biological corridors;
- Restoring habitats during operations and/or after operations; and
- Implementing biodiversity offsets.

Critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes.

In areas of critical habitat, the client will not implement any project activities unless all of the following are demonstrated.

- No other viable alternatives within the region exist for development of the project on modified or natural habitats that are not critical;
- The project does not lead to measurable adverse impacts on those biodiversity values for which the critical habitat was designated, and on the ecological processes supporting those biodiversity values;
- The project does not lead to a net reduction in the global and/or national/regional population of any Critically Endangered or Endangered species over a reasonable period of time; and
- A robust, appropriately designed, and long-term biodiversity monitoring and evaluation program is integrated into the client's management program.

In such cases where a client is able to meet the requirements defined above, the project's mitigation strategy will be described in a Biodiversity Action Plan and will be designed to achieve net gains of those biodiversity values for which the critical habitat was designated.

2 Desktop Data Collection

A literature review will be performed to understand the baseline conditions of the Project Area of Analyses (AoA) as well as informing the CHA. Primary sources of Project-related information such as draft ESIA and EIA report and other literature sources including reports, articles, etc. related to the site and on-line resources were used to support this study. Spatial analysis of data available through the Integrated Biodiversity Assessment Tool (IBAT) will be compiled. National Red List information will be also reviewed.

Protected areas and internationally recognized areas such as Key Biodiversity Areas (KBAs) and Important Bird Areas (IBAs) within the AoA will be identified. Such areas require consideration as they provide an indicator of the likely presence of CH-qualifying biodiversity (IFC 2019, Guidance Note 54) and carry specific requirements under IFC PS6.

3 Field Data Collection and Verification of Available Information

Baseline information on terrestrial ecology will be collected through ecological surveys conducted within the scope of the Environmental and Social Impact Assessment (ESIA) and Environmental Impact Assessment (EIA) studies.

4 Identification of the Ecologically Appropriate Area of Analysis

The investigation into the region's ecology will be carried out to define an "Ecologically Appropriate Area of Analysis" (AoA), to determine the presence of features that may qualify

for Critical Habitat. The AoA will be identified at a scale larger than the project site or impact area itself, considering large-scale ecological processes. This approach ensures that all potential risks within the project footprint and surrounding vicinity are taken into consideration.

The AoA will be defined using a combination of water catchments, topographic information, and legally protected areas and/or internationally recognized areas of high biodiversity value information. Species with a very specific distribution and ecological requirements will be taken into account in defining the AoA.

5 Critical Habitat Assessment Criteria

Critical habitats are areas of high biodiversity value that include at least one or more of the five values specified in IFC-PS6 and/or other recognized high biodiversity values. Each criterion has the same importance for making critical habitat designations or for determining compliance with PS6. Critical habitat criteria are as follows and should form the basis of any critical habitat assessment:

- Criterion 1: Critically Endangered (CR) and/or Endangered (EN) species
- Criterion 2: Endemic or restricted-range species
- Criterion 3: Migratory or congregatory species
- Criterion 4: Highly threatened and/or unique ecosystems
- Criterion 5: Key evolutionary processes

Projects that are located within internationally and/or nationally recognized areas of high biodiversity value may require a critical habitat assessment. Examples include the following:

- Areas that meet the criteria of the IUCN's Protected Area Categories Ia, Ib and II.
- Key Biodiversity Areas (KBAs), which encompass Important Bird and Biodiversity Areas (IBAs).

Consultation with the relevant national and international organizations that designate some areas is required. These areas will be identified during the assessment of critical habitat and brought to the attention of IFC as early as possible in the financing process. They include the following:

- UNESCO Natural and Mixed World Heritage Sites
- Sites that fit the designation criteria of the Alliance for Zero Extinction (AZE)

5.1 Criterion 1: Critically Endangered (CR) and/or Endangered (EN) Species

Species threatened with global extinction and listed as CR and EN on the IUCN *Red List of Threatened Species* shall be considered as part of Criterion 1. Critically Endangered species face an extremely high risk of extinction in the wild. Endangered species face a very high risk of extinction in the wild.

Thresholds for Criterion 1 are the followings:

- (a) Areas that support globally important concentrations of an IUCN Red-listed EN or CR species ($\geq 0.5\%$ of the global population and ≥ 5 reproductive units of a CR or EN species).
- (b) Areas that support globally important concentrations of an IUCN Red-listed Vulnerable (VU) species, the loss of which would result in the change of the IUCN Red List status to EN or CR.
- (c) As appropriate, areas containing important concentrations of a nationally or regionally listed EN or CR species.

5.2 Criterion 2: Endemic and/or Restricted-Range Species

For purposes of Criterion 2, the term endemic is defined as restricted range. Restricted range refers to a limited extent of occurrence (EOO).

- For terrestrial vertebrates and plants, restricted-range species are defined as those species that have an EOO less than 50,000 square kilometers (km^2).
- For marine systems, restricted-range species are provisionally being considered those with an EOO of less than 100,000 km^2 .
- For coastal, riverine, and other aquatic species in habitats that do not exceed 200 km width at any point (for example, rivers), restricted range is defined as having a global range of less than or equal to 500 km linear geographic span (i.e., the distance between occupied locations furthest apart).

The threshold for Criterion 2 is the following:

- a) Areas that regularly hold $\geq 10\%$ of the global population size and ≥ 10 reproductive units of a species.

5.3 Criterion 3: Migratory or Congregatory Species

Migratory species are defined as any species of which a significant proportion of its members cyclically and predictably move from one geographical area to another (including within the same ecosystem). Congregatory species are defined as species whose individuals gather in large groups on a cyclical or otherwise regular and/or predictable basis. Examples include the following:

- Species that form colonies.
- Species that form colonies for breeding purposes and/or where large numbers of individuals of a species gather at the same time for non-breeding purposes (for example, foraging and roosting).

- Species that utilize a bottleneck site where significant numbers of individuals of a species occur in a concentrated period of time (for example, for migration).
- Species with large but clumped distributions where a large number of individuals may be concentrated in a single or a few sites while the rest of the species is largely dispersed (for example, wildebeest distributions).
- Source populations where certain sites hold populations of species that make an inordinate contribution to recruitment of the species elsewhere (especially important for marine species).

Thresholds for Criterion 3 are the following:

- Areas known to sustain, on a cyclical or otherwise regular basis, ≥ 1 percent of the global population of a migratory or congregatory species at any point of the species' lifecycle.
- Areas that predictably support ≥ 10 percent of the global population of a species during periods of environmental stress.

5.4 Criterion 4: Highly Threatened or Unique Ecosystems

The IUCN is developing a Red List of Ecosystems, following an approach similar to the Red List for Threatened Species. The client should use the Red List of Ecosystems where formal IUCN assessments have been performed. Where formal IUCN assessments have not been performed, the client may use assessments using systematic methods at the national/regional level, carried out by governmental bodies, recognized academic institutions and/or other relevant qualified organizations (including internationally recognized NGOs).

The thresholds for Criterion 4 are the following:

- Areas representing $\geq 5\%$ of the global extent of an ecosystem type meeting the criteria for IUCN status of CR or EN.
- Other areas not yet assessed by IUCN but determined to be of high priority for conservation by regional or national systematic conservation planning.

5.5 Criterion 5: Key Evolutionary Processes

The structural attributes of a region, such as its topography, geology, soil, temperature, and vegetation, and combinations of these variables, can influence the evolutionary processes that give rise to regional configurations of species and ecological properties. In some cases, spatial features that are unique or idiosyncratic of the landscape have been associated with genetically unique populations or subpopulations of plant and animal species. Physical or spatial features have been described as surrogates or spatial catalysts for evolutionary and ecological processes, and such features are often associated with species diversification. Maintaining these key evolutionary processes inherent in a landscape as well as the resulting species (or

subpopulations of species) has become a major focus of biodiversity conservation in recent decades, particularly the conservation of genetic diversity. By conserving species diversity within a landscape, the processes that drive speciation, as well as the genetic diversity within species, ensures the evolutionary flexibility in a system, which is especially important in a rapidly changing climate.

For illustrative purposes, some potential examples of spatial features associated with evolutionary processes are as follows:

- Landscapes with high spatial heterogeneity are a driving force in speciation, as species are naturally selected based on their ability to adapt and diversify.
- Environmental gradients, also known as ecotones, produce transitional habitat, which has been associated with the process of speciation and high species and genetic diversity.
- Edaphic interfaces are specific juxtapositions of soil types (for example, serpentine outcrops, limestone, and gypsum deposits), which have led to the formation of unique plant communities characterized by both rarity and endemism.
- Connectivity between habitats (for example, biological corridors) ensures species migration and gene flow, which is especially important in fragmented habitats and for the conservation of metapopulations. This also includes biological corridors across altitudinal and climatic gradients and from “crest to coast.”
- Sites of demonstrated importance to climate change adaptation for either species or ecosystems are also included within this criterion.

The significance of structural attributes in a landscape that may influence evolutionary processes will be determined on a case-by-case basis, and the determination of critical habitat will be heavily reliant on scientific knowledge. In the majority of cases, this criterion will apply in areas that have been previously investigated and that are already known or suspected to be associated with unique evolutionary processes. While systematic methods to measure and prioritize evolutionary processes in a landscape do exist, they are typically beyond a reasonable expectation of assessments conducted by the private sector.