

# Guidelines for the application of the IBA criteria

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## Introduction

The identification of Important Bird and Biodiversity Areas (IBAs, formerly called Important Bird Areas until 2013) has a long history (Donald et al. 2019). The first IBA inventories were published in Europe as a response to the need to identify Special Protection Areas (SPAs) under the European Commission Birds Directive and therefore the first set of IBA criteria were tailored to meet the requirements of SPAs (Waliczky et al. 2019). In 1989, the first all-European IBA inventory was published (Grimmett & Jones, 1989) which included the first set of region-wide IBA criteria, followed by the regional IBA inventory for the Middle East in 1994 (Evans, 1994). In 1996, BirdLife developed a global set of IBA criteria which have later been applied in Europe (2000), Africa (2001), Asia (2004), the Americas (2009) and the Pacific (2010).

Guidelines for the application of the global and regional IBA criteria have been published in the successive regional IBA inventories. However, these guidelines have never been brought together in a single document to aid the identification and revision of IBAs. This document is aiming to fill this gap, summarizing existing guidelines and practices in the application of the global, regional and sub-regional IBA criteria. It also provides information on the changes adopted by the BirdLife Council in 2009 to the global IBA criteria A1 and A4, which have not been fully and consistently communicated to the BirdLife Partnership and which also have a knock-on effect on the regional IBA criteria as explained in the section on regional criteria. In 2019, the Secretariat has made some further changes to the IBA criteria A2 (restricted-range species) and A3 (bioregion-restricted species) to bring them closer to their KBA criteria equivalent which are also explained in this document.

In April 2016, the IUCN Council adopted the [Global Standard for the Identification of Key Biodiversity Areas](#) (KBAs), which is now the benchmark for site identification around the world. In September 2016, BirdLife and other global conservation organisations launched the [KBA Partnership](#). Several of the new KBA criteria are similar to and based on the respective global IBA criteria, however, there are some important differences in both the criteria and their proposed thresholds. As a KBA Partner, BirdLife is committed to the identification, documentation and promotion of KBAs identified under the [KBA Standard](#). It is a huge undertaking, given the differences between the IBA and KBA criteria but also because of the average age and quality of the IBA data. From January 2017 onwards, all newly identified IBAs should also be proposed as a KBA. BirdLife Partners undertaking a review of existing IBAs after this date are also encouraged to apply the KBA criteria alongside the IBA criteria. The current IBA criteria guidelines should be used in conjunction with the respective KBA criteria and the recently published [Guidelines for Using the Global Standard for the Identification of Key Biodiversity Areas](#).

The current IBA criteria guidelines should be used in conjunction with the following documents and data:

- The latest list of qualifying species and their global, regional and sub-regional thresholds for each criterion which is available upon request from the BirdLife Secretariat
- The document *Guidance on the de-listing of IBAs – 2020 update*
- *The Marine IBA Toolkit for the identification of IBAs at sea*
- To harmonise spatial data sets for IBAs the *Documentation and Mapping Standards for Key Biodiversity Area (KBA) Assessments* should be used
- Latest list of IBAs (available on the Data Zone <http://datazone.birdlife.org/site/search>).

All this information is available to download from the BirdLife Extranet:

<https://extranet.birdlife.org/display/IP/IBA+Updates>.

## Global IBA criteria

### General overview

These standardized criteria are designed to identify IBAs of global significance (“level A” criteria).

The global criteria categories are as follows:

- Sites with significant populations of globally threatened species (A1)
- Sites with significant populations of at least two restricted-range species (A2)
- Sites with significant breeding assemblages of bioregion-restricted bird species (A3)
- Globally significant concentrations of congregatory species (A4).

It is important to note that although it is not explicitly mentioned in the criteria definitions, the aim of identifying IBAs has always been to secure viable populations of the qualifying species at each site. At the same time, IBAs are also forming a network where the survival of qualifying species’ populations at one site may depend on keeping other sites in good conservation status as well (e.g. for migratory birds within a flyway).

Numeric thresholds are defined under each of these criteria but they have not been applied in a consistent manner across the regions. Application of these thresholds is important so that we can maintain the integrity of the IBA network. It is understood that it is not always possible to generate precise assessments for all sites for a variety of reasons and we accept that in some cases the range of population estimates will be wide or the estimate will be inferred from limited information. However, we encourage Partners to apply these thresholds where possible, and to provide as much supporting information as they can for those estimates where uncertainty is high.

To be able to assess the relative importance of IBAs for each qualifying species, it is essential to provide estimates of their population size during future IBA reviews. These estimates should ideally be based on recent (no more than 8-10 years’ old) field counts and surveys and it is recommended where possible that for each trigger species a minimum and a maximum is given. They may be based on:

- a. Entire and complete site-level counts, for those sites that are accessible and whose trigger species can be counted with a reasonable degree of accuracy (e.g. many species of seabirds at their breeding colonies, species on passage at bottleneck sites, non-breeding waterbird at wetland sites).

- b. Some extrapolation of counts, or detections, made within part of a site, perhaps on the basis of the extent of suitable habitats within the IBA (e.g. the extrapolation of a forest trigger species based on a sample from a portion of a forest IBA; the estimate of the number of seabirds using a marine IBA based on tracking data).
- c. Published or unpublished information relating to species and/ or the IBA.
- d. Where no such information is available, then expert judgement can also be used to estimate approximate population size.

It is really important, especially where estimates have been generated based on b-d above, that additional information is supplied in the data base giving an adequate rationale for the figures presented, to facilitate verification of the assessments by the Regional Coordinators and the BirdLife Secretariat. This information is also crucial for future interpretation during subsequent updates. The full citation of published results should be given where used. If the totals given have been based on any extrapolation, or on expert judgement, then Partners should provide the following information:

- The total number of actual counts or detections
- The basis for any extrapolation applied E.g.
  - relative abundance generated for part of a site and based on the extent of suitable habitat throughout the site;
  - sample sizes, accuracy of the data and representativeness of the datasets used to identify an IBA based on a sample of tracking data
  - known underestimated counts for shy species, perhaps based on a literature source
- Any supporting information relating to sources of expert judgement.

Below is a summary of the four global IBA criteria in their current version.

IBA Criterion	Description
<b>A1: Globally Threatened Species</b> <i>Criterion: the site is known or thought regularly to hold significant numbers of a Globally Threatened species</i>	The site qualifies if it is known, estimated or thought to hold a population of a species categorized on the IUCN Red List as globally threatened (Critically Endangered, Endangered and Vulnerable). Specific thresholds apply to species in the three threat categories. The list of globally threatened species is maintained and updated annually for IUCN by BirdLife International ( <a href="http://www.birdlife.org/datazone/species">www.birdlife.org/datazone/species</a> ).
<b>A2: Restricted Range Species</b> <i>Criterion: the site is known or thought to hold a significant population of at least two range-restricted species.</i>	Restricted-range bird species are those having a global range size less than or equal to 50,000 km <sup>2</sup> . “Significant population”: it is recommended that site-level populations of at least two restricted-range species should be equal to or exceed 1% of their global population. This criterion can be applied to species both within their breeding and non-breeding ranges.

<p><b>A3: Bioregion-restricted assemblages</b></p> <p><i>Criterion: the site is known or thought to hold a significant component of the group of species whose distributions are largely or wholly confined to one biome-realm</i></p>	<p>Bioregion-restricted assemblages are groups of species with largely shared distributions which occur (breed) mostly or entirely within all or part of a particular bioregion. Bioregions are defined by the WWF classification of biome-realms. Many biome-realms hold large numbers of species restricted to them, often across a variety of different habitat types; networks of sites must be chosen to ensure, as far as possible, adequate representation of all relevant species. In data-poor areas, knowledge of the quality and representativeness of the habitat types within sites alongside incomplete knowledge of the presence of bioregion-restricted species can be used to inform site selection. Many biome-realms cross political boundaries; where this is so, national networks of sites are selected to ensure that all relevant species in each country are adequately represented in IBAs. Thus biome-realms require that the networks of sites take account of both the geographical spread of the biome-realm and the political boundaries that cross them, as appropriate. Under “significant component” it is recommended to use 30% of the number of bioregion-restricted species within a biome-realm within a country or five bioregion-restricted species, whichever is greatest.</p>
<p><b>A4: Congregations</b></p> <p><i>Criterion: the site is known or thought to hold congregations of <math>\geq 1\%</math> of the global population of one or more species on a regular or predictable basis.</i></p>	<p>Sites can qualify whether thresholds are exceeded simultaneously or cumulatively, within a limited period. In this way, the criterion covers situations where a rapid turnover of birds takes place (including, for example, for migratory land birds).</p>

Criterion A1 Globally Threatened Species: the site is known or thought regularly to hold significant numbers of a Globally Threatened species.

Sites are identified under this criterion for Critically Endangered, Endangered and Vulnerable species on the IUCN Red List, as assessed by BirdLife International, in its role as the Red List Authority for birds; the current categories for all species can be viewed at [www.birdlife.org/datazone/species](http://www.birdlife.org/datazone/species). For the identification of new IBAs under this criterion, the latest up-date of the Red List categories should be used. IBAs previously identified for species that have subsequently been downlisted to a lower threat category will have to be reassessed to ensure they still meet other IBA criteria. If a site no longer meets any of the global or regional IBA criteria for that species (e.g. species now considered Least Concern), the species will be removed as a trigger species from the IBA(s) in question during the next review of the IBA.

In the earlier version of this criterion, species in the Red List categories of Conservation Dependent, Data Deficient and Near Threatened were also used to identify IBAs if they were found in significant numbers (although to a varying degree between the different regions). As a result of the BirdLife Council decision made in 2009, criterion A1 can no longer be applied to species within these categories (the category Conservation Dependent no longer exists as a Red List category). IBAs identified solely on the basis of supporting Near Threatened species are regarded as regional IBAs (see section on regional IBA criteria).

Under criterion A1, slightly different or no thresholds were used for species in the different categories in the different regions.

The use of the minimum threshold of one individual or regular presence of a CR or EN species irrespective of the abundance at the site in the past have led to the identification of IBAs of relatively low importance. From now on, it is recommended that to meet A1, a site must support:

- at least 15 individuals (the equivalent of 5 Pairs/Reproductive Units) of a CR or EN species with a global population of >1,500 individuals, or
- at least 1 individual of a CR or EN species with a Global population of 1,500 individuals or fewer, including those classified on the IUCN Red List as CR(PE) and CR(PEW) or
- 30 individuals (10 pairs/ Reproductive Units) of a species classified as Vulnerable, or
- >95% of the global population of any CR or EN species for at least one life history segment (e.g. breeding or wintering).

The words “regular” and “significant” in the criterion definition are intended to exclude instances of vagrancy, marginal occurrence and ancient or historical records. “Regular” includes seasonal presence of a species at a site, e.g. migratory species or sites which meet habitat requirements for qualifying species on a cyclical basis, for example when climatic conditions are favorable, when seasonal flooding occurs or there are changes in food sources. In addition, this criterion allows for the inclusion of sites that have the potential to hold globally threatened species following habitat restoration or re-introductions. Similarly, sites where a globally threatened species was intentionally introduced, e.g. to predator free islands, can also be considered IBAs provided they are in close proximity to the natural range of the species. Following the KBA Guidelines, a site that supports an introduced population outside its natural range and that is considered wild may be identified as an IBA only if all the following conditions are met:

- (a) The known or likely intent of the introduction was to reduce the extinction risk of the introduced species;
- (b) The site is geographically close to the natural range of the taxon (see IUCN SPSC, 2017, Section 2.1.3 for definition of “geographically close”);
- (c) The introduced population has produced viable offspring at the site; and
- (d) At least five years have passed since introduction.

Criterion A2 Restricted Range Species: the site is known or thought to hold a significant population of at least two range-restricted species.

Formerly, this criterion required the definition of Endemic Bird Areas (EBAs) on the basis of two or more restricted-range species with overlapping ranges or Secondary Areas (SA) with a single restricted-range species. EBAs are important regions for conservation where the breeding ranges of two or more restricted range species partially or completely coincide. For more information on EBAs, please see information on the [Data Zone](#). The criterion required that a significant set of species defining an EBA were present at the IBA and that the IBAs within the EBA form a set of sites that includes at least one site for each species defining that EBA. The current definition is simpler as it only requires the co-occurrence of two restricted-range species with significant populations. It is recommended that the site-level population of at least two restricted-range species should be equal to or exceed the 1% of the global population threshold for these to be considered “significant”. A restricted-range species was defined as having a historic global range of 50,000 km<sup>2</sup> or less, thus not including species with current distribution of less than this area due to habitat loss or other pressures. To align this criterion more closely with KBA criterion B2, the new definition of restricted-range species is adopted which states that “Species having a global range size less than or equal to the 25th percentile of range-size distribution in a taxonomic group within which all species have been mapped globally, up to a maximum of 50,000 km<sup>2</sup>.” For birds, this threshold is 50,000 km<sup>2</sup>.

This criterion can be applied to both the breeding and non-breeding ranges of restricted-range species and also for marine species.

Criterion A3 Bioregion-restricted assemblages: the site is known or thought to hold a significant component of the group of species whose distributions are largely or wholly confined to one bioregion

The site has to form one of a set selected to ensure that, as far as possible, all species restricted to each bioregion are adequately represented nationally.

This category applies to groups of bird species with largely shared distributions which are mostly or wholly confined within a particular bioregion. For the definition of a bioregion we follow the WWF classification of biome-realms as recommended in the KBA Standard. Bioregion-restricted species are therefore those species whose global breeding distributions lie within the defined boundaries of a biome-realm. According to the KBA Standard Guidelines, for a species to be considered bioregion-restricted, at least 95% of the global population should be confined to a single bioregion. This is more restrictive than the 80% threshold for biome-restricted birds previously applied under this IBA criterion.

The bioregion is defined in the KBA Standard as “Major regional terrestrial and aquatic habitat types distinguished by their climate, flora and fauna, such as the combination of terrestrial biomes and biogeographic realms or marine provinces. These biogeographic units are typically about an order of magnitude larger in area than the ecoregions nested within them.” The WWF biome-realm classification is the only globally available system to uniformly define bioregions across the globe and this is why it is recommended by the KBA Standard and is now adopted for use under this IBA criterion. In contrast, no global classification of biomes was available in the late 1990s for generating bird-species lists for BirdLife’s IBA Programme. This has necessitated a regional

approach to the identification of biomes and has resulted in inter-regional differences between the biome classifications used but, as far as possible, the overall scale at which biome divisions are recognised—the ‘depth’ of treatment—is comparable across the regions. However, to date there has been no published global map of biomes adopted by BirdLife, which made it very difficult to make a systematic revision of biome-restricted species. The difference between the species previously considered biome-restricted under the BirdLife system and now assessed as bioregion-restricted is considerable, about 30% of the former (1142 of the 3883 previously biome-restricted species that remains on the list). The number of species on the new list of bioregion-restricted bird species, generated through an overlap assessment between the WWF bioregion layer and the species’ Extent of Suitable Habitat (ESH) maps is currently 3505. Acknowledging that this list may exclude some relevant species (due to inaccurate ESH maps and/ or the resolution of the WWF layer) we will be inviting feedback from experts in due course.

In applying this criterion, there are several important considerations:

- Number and area of sites: It is generally preferable to select a few, large sites that span the distribution of the biome-realm rather than many small ones confined to only a part of it. This ensures that a greater number of species are represented per site, reflects the geographical distribution of the biome-realm relative to the political boundaries of the country and increases the chances of the site supporting viable populations of the bioregion-restricted species. Sites should not, however, be so large that they are not amenable to conservation and, in some cases, small sites with high population densities may be preferable to large ones with lower densities. Thus, in applying this category, the number of sites selected per country takes into account both the size of the country and the relative amount of a given biome within it.
- Coverage of all species restricted to a biome-realm: Sites should be chosen such that, between them, all the species of a given biome-realm should be represented at least once, and preferably at least three times. Common sense should be used when selecting sites. This usually means that those which are rich in bioregion-restricted species are chosen first. Subsequent choice of sites is guided by selecting those sites which hold those bioregion-restricted species that do not occur at sites previously selected. Thus, if there are 20 species of a given biome-realm in a country, the richest single site may, for example, hold 11 of these. The next richest site may hold 9 species but if these also all occur at the first site, the next site to be proposed as an IBA might be one with 7 species, because it has 3 species which do not occur at site one. This would mean that 14 of the 20 species are now represented. The next site to be chosen might be that which adds another two, and so on...As a general rule, IBAs under this criterion should hold at least five bioregion-restricted species. Some sites, however, may be chosen for a smaller number of species which would otherwise be under-represented, such as those species confined to a relatively small part of the biome-realm, or which have narrow habitat requirements within the biome-realm, such that they do not co-occur with many other species of the biome-realm.
- When making site selections under each biome-realm, a guideline threshold of 30% of the national complement should be used to decide whether a site holds the ‘significant component’ of bioregion-restricted species that the criterion requires. Thus, in the

example above, with 20 species confined to that particular biome-realm in the country, a threshold of 6 species (30% of 20) should be used to make the first cut of sites. This threshold has to be used separately for each biome-realm (some sites will hold species from more than one biome-realm).

- Coverage of all habitat types within a given biome-realm: More than one habitat type, and therefore bird community, often occurs within a given biome-realm. The set of IBAs selected should include representative areas of all of the key habitats of the biome-realm.

Many threatened (criterion A1) and restricted-range (criterion A2) species are also bioregion-restricted species. It is therefore often practical to select IBAs under category A3 after IBAs have been selected for threatened species (A1) and restricted-range species (A2), in order to fill any gaps in the coverage of the biome-realms. In other words, candidate IBAs will already have been selected in many biomes-realms for threatened (Category A1), restricted-range (A2), and also congregatory (A4) species. It often therefore makes sense to determine whether any of these candidate IBAs already chosen for other reasons could also be selected under A3. For some biome-realms, only a few, if any, additional IBAs may be needed to complete the network of sites proposed under A3 for these biome-realms.

Note that some biome-realms include habitats where delimiting the boundaries of IBAs may be particularly difficult, e.g. deserts and steppe lands. Account should be taken of the existing protected area network (i.e. National Parks, Nature Reserves, etc.) when selecting IBAs and defining their boundaries. This is true to all criteria but is particularly relevant to A3 given that species characteristic of biome-realms often have a wide distribution with relatively even densities over large and homogenous areas (e.g. in savanna or tropical lowland forests) where identifying sites is challenging.

**Criterion A4 Congregations: the site is known or thought to hold congregations of  $\geq 1\%$  of the global population of one or more species on a regular or predictable basis.**

Congregatory species are those that gather together in large numbers at a particular site at a particular time in their life cycle for feeding, breeding, resting or migratory movements. Such species tend to have specialized ecological requirements due to their dependency on a relatively small proportion of their total range. Their congregatory behavior makes them inherently vulnerable at the population level. This criterion helps to identify the most important sites for this group of species both on land and at sea. Large proportion of congregatory species are waterbirds and seabirds but the criterion also allows for identifying IBAs for terrestrial species as long as they show high concentrations at specific sites.

Earlier version of this criterion included three additional sub-criteria on biogeographic populations, 20,000 waterbirds/10,000 pairs of seabirds and on bottleneck sites. As a result of the 2009 decision of the BirdLife Council, these sub-criteria were removed from criterion A4, partly to align it more closely with the KBA criteria that were under development at the time. IBAs identified solely on the basis of these sub-criteria are considered regional IBAs and these sub-criteria are now included in the unified system of regional IBA criteria (see section on regional IBA criteria below).



The 1% of global population threshold of congregatory species are calculated by the BirdLife Secretariat based on the following protocol:

- As a baseline, global population estimates documented by BirdLife in its assessments for the IUCN Red List are used (these are managed in the Red List database: the Species Information Service), including for waterbirds, seabirds and other congregatory species
- The arithmetic average (mid-point) of the minimum and maximum estimates given there are calculated and converted to individuals where required.
- The 1% thresholds are rounded according to the following rules:
  - 1% thresholds between 1 and 10 : rounded to nearest 1
  - 1% thresholds between 11 and 100 : rounded to nearest 5
  - 1% thresholds between 101 and 1,000 : rounded to nearest 10
  - 1% thresholds over 1,000 : rounded to nearest 100
- The 1% thresholds should be reviewed every four years linked to species up-dates, sites no longer meeting new thresholds should be re-assessed within two years of the change in the species' global estimates.
- For congregatory species other than waterbirds and seabirds the SIS database will be used as the base list of such species for which the 1% threshold can be applied but no attempt will be made to try to identify all species for which this might be applied. New species can be added to the list upon request, these need to be evaluated on a case-by-case basis.

Sites can qualify under this criterion whether thresholds are exceeded a) simultaneously or b) cumulatively, within a limited period during a season. In this way, the criterion covers situations with rapid turnover of birds.

Detailed guidelines for the application of the IBA criteria in the marine environment are provided separately (see Marine IBA Toolkit).

## Regional IBA criteria

### General overview

The table below presents a unified system of regional IBA criteria, which includes:

- Previously applied regional criteria for Europe and the Middle East, which continue to be applied only in these two regions (B1b, B2a)
- Criteria that previously were part of the global A1 and A4 criteria but have been relegated to the regional level after the 2009 decision of the BirdLife Council. These criteria are applicable globally (Ba1, B3a, b and c).

Regional IBA criteria for congregatory species were developed independently in the USA and Canada, however, these have not been harmonized to create a unified set of regional criteria for North America. Moreover, sites identified using these criteria have not been included in the World Bird Database. Therefore, these criteria are not included in the table below.

This system does not include any new regional IBA criteria nor does it propose new thresholds for the existing criteria. It does propose, however, a re-organization of the regional criteria following the logic of the global IBA criteria and a new numbering of the regional criteria. Numbers of the previous criteria are provided for reference.

Category	Criteria	Thresholds applied	Previous IBA criterion
B1: Species of conservation concern	B1a: Globally Near Threatened species: The site regularly holds significant numbers of a Near Threatened species (NT).	Non-passerines – 10 pairs/30 individuals; Passerines – 30 pairs/90 individuals	Formerly part of global criterion A1
	B1b: Species with an unfavourable conservation status in the region. The site is one of the ‘n’ most important in a country for a species with an unfavourable conservation status in the region, and for which the site-protection approach is thought to be appropriate	In Europe, n is defined according to the proportion of the species’ population that is found within the country, from 5 to 100 sites per country. Additionally, each site should hold more than 1% of the national population of the species. In the Middle East, n is 5, regardless of the size of the country and no population threshold per site was applied.	B2 (Europe and Middle East)
B2: Species with most of their range restricted to a region	B2a: Species with a favourable conservation status but concentrated in the region: The site is one of the ‘n’ most important in a country for a species with a favourable conservation status in a region, but with its global range concentrated in that region, and for which the site-protection approach is thought to be appropriate.	In Europe, n is defined according to the proportion of the species’ population that is found within the country, from 5 to 100 sites per country. Additionally, each site should hold more than 1% of the national population of the species. In the Middle East, n is 5, regardless of the size of the country and no population threshold per site was applied.	B3 (Europe and Middle East)
B3: Regionally important congregations	B3a: Regionally important congregations – biogeographical populations. The site is known or thought to hold, on a regular basis, $\geq 1\%$ of a biogeographic or other distinct population of a congregatory waterbird, breeding seabird or other species.	Variously, flyway or biogeographical populations were used, also numeric thresholds for different groups of species.	A4i (formerly global), B1i, B1ii, B1iii (Europe), B1i, B1ii (Middle East)
	B3b: Regionally important congregations – multi-species aggregations. The site is known or thought to hold, on a regular basis, $\geq 20,000$ waterbirds or		A4iii (formerly global)

	>= 6,700 pairs of seabirds of one or more species.		
	B3c: Regionally important congregations – bottleneck sites. Site known or thought to exceed thresholds set for migratory species at bottleneck sites.	3000 raptors or cranes/5000 storks in Europe/Middle East	A4iv (formerly global), B1iv (Europe), B1iv (Middle East)

## Category B1: Species of conservation concern

Criterion B1a: Globally Near Threatened species: The site regularly holds significant numbers of a Near Threatened species (NT).

This criterion was formerly part of the A1 criterion. As for the various categories of globally threatened species under A1, different thresholds were also used for Near Threatened species in the different regions. From now on, we are proposing to use a uniform set of thresholds for NT globally, which are:

Non-passerines – 10 pairs (reproductive units)/30 individuals, Passerines – 30 pairs (reproductive units)/60 mature individuals/90 individuals.

The words “regular” and “significant” in the criterion definition are intended to exclude instances of vagrancy, marginal occurrence and ancient or historical records. “Regular” includes seasonal presence of a species at a site, e.g. migratory species or sites, which meet habitat requirements for qualifying species on a cyclical basis, for example, when climatic conditions are favorable, when seasonal flooding occurs or there are changes in food sources.

Criterion B1b: Species with an unfavourable conservation status in the region. The site is one of the ‘n’ most important in a country for a species with an unfavourable conservation status in the region, and for which the site-protection approach is thought to be appropriate.

This criterion has only been applied in Europe and the Middle East (and was previously termed B2) and will continue to be applied in these regions only. Under this criterion, sites are identified for those species of regional conservation concern for which the site-protection approach is thought to be appropriate.

In the Middle East, the 'top 5' sites per country were chosen and no numerical thresholds were defined. In Europe, In order to identify a network of IBAs covering a substantial proportion of the regional population of each relevant species throughout their regional range, numerical thresholds were defined. For each country holding 1% or more of the minimum regional (European) breeding population of a given species, those sites which support 1% or more of the minimum national breeding population should be selected. Assuming that these thresholds are met for a particular species in a particular country, there is also an upper limit (n) to the number of sites allowed to be identified in that country for that species, ranging from five to 100, depending on the circumstances.

This criterion addresses the problem of identifying IBAs for species that are widely dispersed across the landscape but which are amenable to conservation through site protection, and is framed so as to limit the maximum number of qualifying sites in countries with large populations of any species. This criterion should, however, be used with caution for example in countries where absolute populations of a species are low (e.g. 100 pairs or less), since use of the 1% level loses meaning if a site qualifies on the basis of a single pair. Also, for countries which hold less than 1% of the population of a given species, or for countries that comprise less than 1% of the land area of Europe, sites may still be selected under this criterion if they support similar numbers of the species at sites in other countries which meet this criterion in a standard fashion.

Proportion (%) of the total regional population or range held by the country in question	Maximum number of sites that may be identified in the country in question
1-5	5
10	10
20	16-25
30	26-35
40	36-45
50	46-55
60	56-65
70	66-75
80	76-85
90	86-95
100	96-100

For many widespread species of conservation concern, the site protection approach may not be appropriate over large parts of their range. Yet, because they are dispersed, many IBAs identified for other species are likely to hold a sizeable population of these species. In addition, towards the edge of their range they may occur in well-defined sites, which could be considered important for maintaining the overall range of the species even if absolute numbers occurring at any of these “edge” sites is low.

This criterion is applied to bird data for the season in which the species qualifies as of conservation concern. As a result, the great majority of applications of this criterion concern the breeding season since only a few species have been identified as of conservation concern in Europe and the Middle East on the basis of their non-breeding populations.

### Category B2: Species with most of their range restricted to a region

Criterion B2a: Species with a favourable conservation status but concentrated in the region: The site is one of the ‘n’ most important in a country for a species with a favourable conservation status in a region, but with its global range concentrated in that region, and for which the site-protection approach is thought to be appropriate.

This criterion has only been applied in Europe and the Middle East (and was previously termed B3) and will continue to be applied in these regions only. This criterion applies to those species that have a favourable conservation status but with more than 50% of their range lying within the region and for which the site protection approach is thought to be appropriate. The principles and methods used for setting thresholds, calculating the maximum number of sites per species in each country and applying the criterion are the same as for the B1b criterion.

### Category B3: Regionally important congregations

Criterion B3a: Regionally important congregations – biogeographical populations. Site known or thought to hold, on a regular basis,  $\geq 1\%$  of a biogeographic or other distinct population of a congregatory waterbird or seabird or other species.

This criterion is the result of merging of former sub-criterion A4i and the former B1i, ii and iii sub-criteria that were applied in Europe and the Middle East. The aim of this criterion is the same as for A4 that is to identify important sites for species which are vulnerable at sites because of their congregatory nature. However, the numeric thresholds are usually set at a lower level than the global population, based on 1% of the biogeographical population of congregatory waterbirds, 1% of a distinct population of terrestrial congregatory species or 1% of a distinct population of seabirds, wherever such 'biologically distinct' populations can be clearly defined.

The term waterbird is used in the same sense as “waterfowl” in the Ramsar Convention and is considered to be synonymous with “waterbirds” as “birds ecologically dependent on wetlands”. This definition thus includes any wetland bird species. However, at the broad level of taxonomic order, it includes especially: penguins: Sphenisciformes; divers: Gaviiformes; grebes: Podicipediformes; wetland related pelicans, cormorants, darters and allies: Pelecaniformes; herons, bitterns, storks, ibises and spoonbills: Ciconiiformes; flamingos: Phoenicopteriformes; screamers, swans, geese and ducks (wildfowl): Anseriformes; wetland related raptors: Accipitriformes and Falconiformes; wetland related cranes, rails and allies: Gruiformes; Hoatzin: Opisthocomiformes; wetland related jacanas, waders (or shorebirds), gulls, skimmers and terns: Charadriiformes; coucals: Cuculiformes; and wetland related owls: Strigiformes.

Seabirds include the families Merginae (seaduck), Podicipediformes (Grebes), Gaviidae (divers), Spheniscidae (penguins), Diomedidae (albatrosses), Procellariidae (petrels and shearwaters), Hydrobatidae (storm-petrels), Pelecanoididae (diving petrels), Pelecanidae (pelicans), Phaetontidae (tropicbirds), Sulidae (gannets and boobies), Phalacrocoracidae (cormorants), Fregatidae (frigatebirds), Stercorariidae (skuas and jaegers), Laridae (gulls), Sternidae (terns), Chionididae (shearwaters) and Alcidae (auks). Detailed guidelines for the application of the IBA criterion in the marine environment are provided separately (see Marine IBA Toolkit).

The definition of the term “biogeographical population” as applied under the previous A4 IBA criterion was derived from zoogeographic realms (e.g. the Americas was divided into Nearctic and Neotropical, Africa into Afrotropical and North Africa, etc.). This is very different from the Ramsar Convention definition of “biogeographical” and was arrived at by merging all flyways and other distinct populations within such zoogeographical realms and taking 1% of the aggregate sum of these. Therefore, IBAs identified under the previous A4i sub-criterion can't be directly mapped onto the corresponding Ramsar criteria. Similarly, the flyway level populations used under regional IBA criterion B1i in Europe and the Middle East may differ from the respective biogeographic populations under the Ramsar definition. The Ramsar definition of biogeographical population has now been adopted by AEWA and are being considered by other conservation agreements for adoption, therefore it has a very strong conservation relevance. Wetland International's Waterbird Population Estimates (WEP) provide estimates for all distinct biogeographical populations under this definition which is available on the WEP Website:

<http://wpe.wetlands.org/>.

Taking these into consideration, **it was agreed that when applying this criterion in the future the Ramsar definition of “biogeographical populations” of waterbirds will be used.** Several types of „populations“ are recognized:

- i) the entire population of a monotypic species;
- ii) the entire population of a recognized subspecies;
- iii) a discrete migratory population of a species or subspecies, i.e., a population which rarely if ever mixes with other populations of the same species or subspecies;
- iv) that „population“ of birds from one hemisphere which spends the non-breeding season in a relatively discrete portion of another hemisphere or region. In many cases, these „populations“ may mix extensively with other populations on the breeding grounds or mix with sedentary populations of the same species during the migration seasons and/or on the non-breeding grounds;
- v) a regional group of sedentary, nomadic or dispersive birds with an apparently rather continuous distribution and no major gaps between breeding units sufficient to prohibit interchange of individuals during their normal nomadic wanderings and/or post-breeding dispersal.

The definition of biogeographic population was further refined by the AEWA Technical Committee, and as is used for the WPE globally, is as follows:

*A waterbird biogeographical population is a population of a species or a sub-species that is either geographically discrete from other populations at all times of the year, or at some times of the year only, or is a specified part of a continuous distribution so defined for the purposes of conservation management.*

The BirdLife Secretariat will provide the 1% thresholds for the relevant biogeographical populations of all regularly occurring waterbird species within a country upon request by the BirdLife Partner who wishes to revise IBAs identified under the previous A4i and B1i criteria. At some sites, more than one biogeographical population of the same species can occur, especially during migration periods and/or where flyway systems of different populations intersect at major wetlands. Where such populations are indistinguishable in the field, as is usually the case, this can present practical problems as to which 1% threshold to apply. Where such mixed populations occur (and these are inseparable in the field), it is suggested that the larger 1% threshold be used in the evaluation of sites.

Criterion B3b: Regionally important congregations – multi-species aggregations. Site known or thought to hold, on a regular basis,  $\geq 20,000$  waterbirds or  $\geq 6,700$  pairs of seabirds of one or more species.

This was formerly part of criterion A4. This criterion was modelled after Ramsar criterion 5, adapted to include seabird colonies. The definition of waterbirds and seabirds is the same as under criterion B3a. This criterion is applied at the site rather than the species level and needs aggregate estimates of the populations of different waterbird or seabird species at a given site. Note that in the original wording of what was sub-criterion A4iii it referred to 10,000 pairs of seabirds. However, the equivalent figure of 20,000 individuals is 6,700 pairs and so during the 2009 criteria changes it was decided to modify this criterion accordingly.

Criterion B3c: Regionally important congregations – bottleneck sites. Site known or thought to exceed thresholds set for migratory species at bottleneck sites.

A migratory bottleneck is a site at which, during certain, usually relatively short, well-defined seasons of the year, large numbers of migratory birds regularly pass through or over. The concentration of birds at these sites at such times is a consequence of both the sites' geographical location and their local topography. Types of sites include:

- The land on either side of the narrowest crossing point, or straits, of a large water body, together with the immediate surrounding area, over and across which birds may funnel in dense, often low-flying flocks.
- Narrow corridors of land, such as, for example, a ridge of highland or edge of a scarp, along which migrating flocks fly, often at low altitude.

In addition, such places may be used as temporary roosting sites by these flocks while on passage.

The birds which make most conspicuous use of such sites and are, therefore, most vulnerable while doing so, are large soaring or semi-soaring species which use thermals to migrate over land by day and, hence, cross bodies of water at their narrowest points. These include pelicans, storks, raptors and cranes.

Although it is airspace at these sites that is important, conservation of the land beneath may be necessary to protect the site and its birds from threats such as shooting, trapping and the construction of obstacles such as power-lines and radio-masts. Also included here migration stop-over sites and nocturnal roosts which may not hold the threshold number of individuals at any one time but which, nevertheless, do hold such numbers over a relatively short period due to the rapid turnover of birds on passage.

In both Europe and the Middle East, the following thresholds were used: 5,000 or more storks (*Ciconidae*) or 3,000 or more raptors (*Accipitriformes* and *Falconiformes*) or cranes (*Gruidae*) pass regularly on spring or autumn migration.

## Sub-regional criteria: C. Important Birds Areas of European Union importance

### General overview

The "C" criteria are used for selecting sites in the European Union which qualify, under the EC Birds Directive, as Special Protection Areas (SPAs). These ornithological criteria represent a consolidation of the criteria which have been used, to date, by the different member states of the EU. The C criteria are based on those used in the first comprehensive IBA inventory of the European Community published in 1989, which received legal recognition as a scientific reference in a ruling by the European Court of Justice. This was followed by other ECJ and national court judgements confirming the legal status of EU IBAs. The C criteria take into account the conservation requirements of species within the EU territory, with the geographical spread of sites representing the full extent of each species' range in the EU as well as sites selected on a basis of relative abundance.

Originally, seven criteria have been applied to identify IBAs in the EU, several of which emulate the higher categories under the global and regional criteria. Criterion C7, however, was not strictly a criterion but rather a space to include SPAs designated on the basis of ornithological criteria but

that don't meet any other IBA criteria. To uphold the scientific standard of the IBA criteria the C7 criterion is no longer in use and sites listed under this criterion are no longer considered IBAs.

More detailed guidance for the application of the IBA C criteria for the identification of IBAs of EU importance is provided in the paper "Draft guidance notes for the selection of Important Bird Areas in European Union Member States and EU accession countries" (Osieck 2001).

Note: sub-regional criteria were also used in the Caribbean for congregatory species and in South Africa for species of national conservation concern and for congregatory species. The application of these criteria have resulted in the identification of a small number of sub-regional IBAs in some of the countries of these two sub-regions. It is recommended not to identify new IBAs using these criteria until such time as regional KBA criteria are developed to ensure the close correspondence between the IBA and KBA networks. For the time being, IBAs identified using these sub-regional criteria will remain in the database.

**Criterion C1: Species of global conservation concern.** The site regularly holds significant numbers of a globally threatened species, or other species of global conservation concern.

This criterion is identical to the original A1 criterion and therefore could be applied to Conservation Dependent, Data Deficient and Near Threatened species. It is proposed that this criterion can continue to be applied to both globally threatened and Near Threatened species but not for DD species (CD species are no longer recognized).

**Criterion C2: Concentrations of species threatened at the European Union level.** The site is known to regularly hold at least 1% of the flyway or EU population of a species considered to be threatened to the EU.

"Threatened species" refers to species, sub-species and populations listed in Annex I of the EC Birds Directive, for which Special Protection Areas (SPAs) are designated under Article 4.1 of that Directive. The definition of "flyway population" is the same as that given for criterion B3a above. However, for a small number of species where the European breeding population is significantly larger than the EU breeding population, lower numerical thresholds have been set. This criterion has also been applied for a number of dispersed species on the basis that the site holds more than 1% of the European population of the species.

**Criterion C3: Concentrations of migratory non-threatened species.** The site is known to regularly hold at least 1% of a flyway population of a migratory species that is not considered to be threatened in the EU.

"Migratory species not considered to be threatened" refer to species considered under Article 4.2 of the Birds Directive (i.e. regularly occurring migratory species not listed in Annex I). "Migration" is defined as seasonal long-distance movements from and to breeding areas. The word "migratory" therefore excludes populations which are largely sedentary or short-distance dispersive. This criterion covers wetlands of international importance (Ramsar Sites) identified under Ramsar criteria category 6, to which reference is made in Article 4.2 of the Birds Directive. Wetlands of international importance uniquely qualifying for waterbirds listed in Annex I of the Birds Directive are covered by criterion C2.



The definition of “flyway population” is the same as that given for criterion B3a above. Lower numerical thresholds than those used under that criterion have not been set under this criterion.

Criterion C4: Large congregations – multi-species aggregations. The site is known to regularly hold at least 20,000 migratory waterbirds, or at least 6,700 pairs of migratory seabirds, of one or more species.

In the original definition of this criterion it refers to a threshold of 10,000 pairs of migratory seabirds. It is proposed to align this criterion with criterion B3b and to adjust the threshold for seabirds to 6,700 pairs, which is the equivalent of 10,000 individuals.

Criterion C5: Large congregations – “bottleneck” sites. The site is a “bottleneck” site where at least 5,000 storks (Ciconiidae) or at least 3,000 migratory raptors (accipitriformes and Falconiformes) or cranes (Gruidae), regularly pass on spring or autumn migration.

This criterion is identical to criterion B3c above so the same definitions apply.

Criterion C6: Species threatened at the European Union level. The site is one of the five most important sites in the European region in question for a species or sub-species considered threatened in the European Union.

“Threatened species” refers to species, sub-species and populations listed in Annex I of the Birds Directive. “European region” refers to what are known as NUTS regions (Nomenclature of Territorial Units for Statistics) established by Eurostat (the EC Statistical Office) to provide a single uniform breakdown of approximately equal territorial units for the production of regional statistics in the EU. NUTS regions are not ideal for birds because many species of birds occur preferentially in remote, sparsely populated areas. Different levels of NUTS region has therefore been selected for the purpose of IBA identification, such that the geographical size of NUTS regions used is roughly the same across the EU.

In general, up to five sites per NUTS region may be identified for a species, however, in exceptional cases there may be grounds for increasing the number of sites per NUTS region to slightly more than five. If two or more sites in a given region hold the same number of pairs or individuals of a particular taxon, the relative priority of the sites for selection as IBAs is ranked according to the overall number of threatened (Annex I) species that occur at each site. The C6 criterion has generally been applied to breeding populations, but may also be applied to non-breeding occurrences if these are not covered well by other criteria in the country concerned. The rationale of the criterion, overall, is to achieve a wide geographical of sites throughout the species’ range in the EU.

Sites meeting C6 should hold appreciable numbers (at the EU level) of the species or sub-species concerned. This additional conditions is necessary to exclude irregular occurrences and sites holding a low number of birds (1% of the regional breeding population or 0.1% of the biogeographical population are suggested as minimum levels), although different countries have adopted different approaches in their definition of “appreciable”.

## References

Grimmett, R.F.A. and Jones, T.A. (1989) Important Bird Areas in Europe. International Council for Bird Preservation.

BirdLife International (2004) Important Bird Areas in Asia: key sites for conservation. BirdLife International.

BirdLife International (2010). Marine Important Bird Areas toolkit: standardized techniques for identifying priority sites for the conservation of seabirds at sea. BirdLife International.

Devenish, C. et al. (2009) Important Bird Areas in the Americas: Priority sites for biodiversity conservation. BirdLife International.

Donald, P.F. et al. (2019) Important Bird and Biodiversity Areas (IBAs): the development and characteristics of a global inventory of key sites for biodiversity.

Evans, M.I. (1994) Important Bird Areas in the Middle East. BirdLife International.

Heath, M.F. and Evans, M.I. eds. (2000) Important Bird Areas in Europe: Priority sites for conservation. 2 vols. BirdLife International.

Fishpool, L.D.C. and Evans, M.I. eds. (2001) Important Bird Areas in Africa and associated islands: Priority sites for conservation. BirdLife International.

IUCN (2016) A Global Standard for the Identification of Key Biodiversity Areas, Version 1.0. First edition. IUCN.

IUCN Standards and Petitions Sub-committee (2017) Guidelines for using the IUCN Red List Categories and Criteria. Version 13.

Osieck, E. (2001) Draft guidance notes for the selection of Important Bird Areas in European Union Member States and EU accession countries”.

Waliczky, Z. et al. (2019) Important Bird and Biodiversity Areas (IBAs): their impact on conservation policy, advocacy and action.