Important Bird Areas and Antarctic Specially Protected Areas: Toward the development of selection criteria

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Summary

This Information Paper supplements Working Paper 43 by setting out draft criteria that might be applied to identified Important Bird Areas (IBAs) as well as to other bird colonies or aggregations[[1]](#footnote-1) when considering ASPA designation.

Draft criteria used to select IBAs or other bird areas for ASPA designation

A review of spatial protection criteria for breeding colonies of seabirds used in other parts of the globe, was undertaken to inform the development of the draft criteria. A summary of these non-Antarctic criteria are provided in Appendix 1.

Having considered a range of issues, draft criteria, in the form of a decision-making process that could be applied to the current list of 204 Antarctic IBAs, as well as other bird breeding sites across Antarctica, are set out below with some examples.

Some additional issues that were raised in the development of these criteria are recorded in Appendix 2.

Criterion A. Percent of global population present

BirdLife International’s IBA criteria are triggered when a site is known or thought to hold 1% or more of the global population on a regular basis. In order to further prioritise those sites which could be designated as ASPAs, a ‘percent of global population’ threshold could be applied. Adjusting this percentage figure up or down will clearly decrease or increase the number of sites respectively that are ‘captured’ by the criterion.

5% is used here as an example and as a starting point for discussion. The outcome from applying a 5% of the global population trigger are shown in Table 1. Of the 204 IBAs identified in Antarctica, 13 IBAs would meet this criterion, 5 of which are already designated as ASPAs (Table 1).

Criterion B. Percent of the Antarctic population present

IBA criteria are triggered when a site is known or thought to hold 1% or more of a biogeographic population on a regular basis.

In order to further prioritise sites, a ‘percent of Antarctic population’ threshold could be applied. As per criterion A, this figure could be adjusted up or down which would decrease or increase respectively the number of sites captured.

10% is used here as an example and as a starting point for discussion and the outcome from applying the 10% of the Antarctic population trigger is provided in table 1 below.

Of the 204 IBAs identified in Antarctica, 5 sites would meet this criterion. Two of these sites are already designated as ASPAs and 2 IBAs that are not currently designated would meet this criterion. A fifth site, Signy Island, also meets this criterion, but was already identified using criterion A above.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | IBAs with 5% or more of **global population** | | | | | IBAs with 10% or more of **Antarctic population** | | |
| **IBA location name** | Emperor | Adelie | Chinstrap | Imperial shag | Sth polar skua | Macaroni | Sthn giant petrel | Antarctic petrel |
| Cape Wadsworth | 9% |  |  |  |  |  |  |  |
| Brunt Ice Shelf | 8% |  |  |  |  |  |  |  |
| Cape Washington | 6% |  |  |  |  |  |  |  |
| Cape Crozier |  | 7% |  |  | 16% |  |  |  |
| Cape Adare |  | 6% |  |  |  |  |  |  |
| Cape Wallace |  |  | 7% |  |  |  |  |  |
| Signy Island |  |  |  | 7% |  |  | 22% |  |
| Emperor Island, Dion Is |  |  |  | 5% |  |  |  |  |
| Cockburn Island |  |  |  | 5% |  |  |  |  |
| Avian Island |  |  |  |  | 12% |  |  |  |
| Cierva Pt and islands |  |  |  |  | 6% |  |  |  |
| Possession Is |  |  |  |  | 6% |  |  |  |
| Foyn Is |  |  |  |  | 5% |  |  |  |
| Craggy Point |  |  |  |  |  | 50% |  |  |
| Scullin / Murray Monoliths |  |  |  |  |  |  |  | 36% |
| Svarthamaren |  |  |  |  |  |  |  | 33% |
| Jutulsessen |  |  |  |  |  |  |  | 17% |

Table 1. IBAs meeting 5% threshold for global population and 10% threshold for Antarctic population. Sites marked in orange are already designated as ASPAs. The population data used here are based on that provided in Harris et al., 2015[[2]](#footnote-2), which may not be the most up-to-date population assessments. There remain high levels of uncertainty in Antarctic bird population data which significantly reduces the reliability of the figures produced in this table.

*Note 1: Further consideration may be required to assign some underlying rigour to the selection of such percentage trigger levels as set out in criteria 1 and 2. The 5% and 10% figures used here as examples have no scientific basis, other than being slightly higher and therefore more selective than the 1% figures used in other international criteria (as set out in Appendix 1) and which have already been applied to derive the initial Antarctic IBA list.*

Criterion C. Threat Status of the species

IBA criteria A1 qualifies sites for species with a (IUCN Red List) threat status of ‘vulnerable’, ‘endangered’ or ‘critically endangered’, as well as sites for species at ‘near threatened’ status where they meet regional threshold size.

It is proposed that criterion C could trigger the need to consider ASPA designation only for relevant IBAs for ‘vulnerable’, ‘endangered’ or ‘critically endangered’ species, in the context of the CEP’s criteria for designating specially protected species.

Examples:

The IUCN red list currently identifies the Macaroni penguin as ‘vulnerable’; no other Antarctic bird species currently has an equal or higher threat status, although the Emperor penguin remains under review[[3]](#footnote-3). Two Macaroni penguin colonies reach the IBA A1 threshold[[4]](#footnote-4) (noting that the majority of breeding locations for this species are north of 60o south). The largest colony is Craggy Point, Clarence Island, which has already been identified in the previous criterion (≥ 10% of Antarctic population present (Table 1)). The other colony, Gibbs Island, is an IBA with Macaroni penguins, Chinstrap penguins and Antarctic fulmars as trigger species.

*Note 2: Further consideration will need to be given as to whether or not to include this criterion, as it may result in overlap with the separate process under Annex II to designate and accord special protection to threatened species. In accordance with the Guidelines for CEP Consideration of Proposals for New and Revised Designations of Antarctic Specially Protected Species under Annex II to the Protocol, species with conservation status of vulnerable or higher can be recommended for designation as a Specially Protected Species, and an Action Plan developed. The development of the Action Plan may itself appropriately give consideration to further protection requirements for the species, including the possible designation as ASPAs of some or all breeding colonies. In other words, consideration might first be given to specially protected species designation prior to any spatial protection measures being applied.*

Criterion D. Direct, indirect or cumulative pressures

The CEP’s Guidelines for Implementation of the Framework for Protected Areas (Resolution 1 (2000)) include the need to undertake an environmental risk assessment to identify actual or potential threats to identified values (see Section 2.4 of the Guidelines).

Application of this criterion will require consideration of actual or potential direct, indirect or cumulative pressures on identified IBAs. The Guidelines also advise assessing the ‘degree of interference’ of a candidate ASPA and asks to what extent the area has been subject to human interference, whether or not there are signs of human activities; whether or not there is a loss or addition of species, natural processes and abiotic material, and to what extent visitation is occurring or the landscape altered.

Consideration could be given to providing some structure to this stage of the assessment, perhaps through the development of a checklist of ‘aspects’ to consider. A semi-quantitative approach might be used such that where a certain number of pressures are identified, consideration for ASPA designation is triggered.

A checklist has not been developed at this stage, but might include, for example, known or potential climate change implications for the bird area; any trends in visitation numbers (perhaps within a certain distance of the bird area); an established station or base within a certain distance of the bird area; known past impacts (e.g. a nearby pollution event); foreseeable future impacts such as the planned construction of a new facility (within a certain distance of the bird area[[5]](#footnote-5)), etc.

It is also noted that sites with no known past or current impacts are also of importance as ‘pristine’ sites for protection as baselines studies and control sites for comparative assessment with disturbed sites.

Criterion E. Unique or rare features

The CEP’s Guidelines for Implementation of the Framework for Protected Areas refer to the need to assess the distinctiveness of an area (see Section 2.3).

If an IBA is identified as being unique or rare, then this might trigger the need for ASPA designation, if the IBA has not already been selected from the criteria applied above.

Examples might be the most southerly breeding location of a species or a breeding location in a different habitat type to other colonies of the species, or the only known example in a biogeographic region.

Example:

Smith Peninsula (IBA100; identified for breeding Emperor Penguins) is the only IBA in Southern Antarctic Peninsula ACBR 15

Other considerations

A number of additional elements may need to be taken into account in assessing the merits of ASPA designation of an IBA or other bird breeding area, including, for example:

* whether an ASPA could be designated that incorporates more than one IBA, such as on the Peninsula where there are dense clusters of colonies and IBAs;
* whether there is significant change in the breeding success at the bird area (either positively or negatively) *cf* the environmental risk assessment component of the CEP’s Guidelines for Implementation of the Framework for Protected Areas;
* ongoing research interest in a colony or bird assemblage e.g. long-term datasets. *cf* the scientific and monitoring component of the CEP’s Guidelines;
* the extent to which a bird species is already represented with the Antarctic protected area system *cf* the representativeness component of the CEP’s Guidelines;
* whether the bird area includes important or unusual assemblages of bird species *cf* the diversity component of the CEP’s Guidelines;
* whether the bird area is thought to play an important ecological role e.g. nutrient run-off supporting vegetation growth around the bird area margins *cf* the ecological importance component of the CEP’s Guidelines.

Discussion

The proposed criteria are potentially presented in a priority order for application, although, as noted above criterion C may need to sit to one side or even be considered first if the threat status of a species requires consideration for designation as a specially protected species prior to any spatial management measures being applied.

How many of the criteria need to be met in order to trigger ASPA designation has not been proposed here. However, some of the criteria, e.g. A and B could be established as automatic “trigger” criteria, such that if their conditions are met, ASPA designation for the bird area should be considered. This needs further consideration.

The designation of ASPAs to protect bird areas in Antarctica should not detract from the need to consider such additional protection measures, as well as the need also to protect offshore foraging locations.[[6]](#footnote-6)

Appendix 1. Non-Antarctic Criteria for Protecting Bird Colonies.

Internationally, two major approaches have been used to identify important bird sites: the criteria developed by the Conference of Parties to the Ramsar Convention and the criteria developed by BirdLife International to identify IBAs[[7]](#footnote-7). The criteria developed by the UK’s Joint Nature Conservation Committee to implement the European Birds Directive were also reviewed.

The following descriptions are included only for comparative purposes. t is noted that whilst consideration is being given here to developing approaches for applying the area protection mechanism of Annex V, that this is being done in the context of the general protections afforded to all areas/species under the Protocol. The application of spatial protection mechanisms in other parts of the world are more likely to be considered where there is a more limited toolbox of conservation measures available.

* 1. Ramsar Convention criteria

The Ramsar Convention, or the Convention on Wetlands, entered into force in 1974 and is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.

The Parties to the Ramsar Convention have developed nine criteria for identifying wetland sites of international importance[[8]](#footnote-8) five of which appear to be relevant to identifying important bird breeding sites:

* *Ramsar Criterion 2* specifies that a wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities;
* *Ramsar Criterion 3* specifies that a wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region;
* *Ramsar Criterion 4* specifies that a wetland should be considered internationally important if it supports plant and/or animal species at a critical stage of their life cycles[[9]](#footnote-9), or provides refuge during adverse conditions;
* *Ramsar Criterion 5* specifies that a wetland should be considered internationally important if it regularly supports 20,000 or more waterbirds; and
* *Ramsar Criterion 6* specifies that a wetland should be considered internationally important if it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.

Underlining added for emphasis. Note, the focus of the Ramsar convention is wetland areas that support a range of species, not just birds.

* 1. IBA criteria

The global level IBA criteria[[10]](#footnote-10) used in 2015 to identify the Antarctic IBAs[[11]](#footnote-11) are:

* Criterion A1: sites holding significant numbers of globally threatened species, or other species of global conservation concern;
* Criterion A2: sites known or thought to hold a significant component of a restricted-range species;
* Criterion A3: sites known or thought to hold a significant component of the group of species whose distributions are largely or wholly confined to one biome;
* Criterion A4i: sites known or thought to hold, on a regular basis, 1% or more of a biogeographic population of a congregatory waterbird species;
* Criterion A4ii: sites known or thought to hold on a regular basis, 1% or more of the global population of a congregatory seabird or terrestrial species;
* Criterion A4iii: sites known or thought to hold, on a regular basis, at least 20,000 waterbirds, or at least 10,000 pairs of seabirds, of one or more species;
* Criterion A4iv: sites known or thought to be a bottleneck site where migratory species pass regularly during migration in numbers exceeding set thresholds.
  1. National criteria

To meet the requirements of the European Union’s 1979 Birds Directive the UK’s Joint Nature Conservation Committee (JNCC) developed Special Protection Area Guidelines[[12]](#footnote-12) that applied a two-stage approach:

Stage 1 (to identify areas which are likely to qualify for SPA status) has four site criteria:

1. An area is used regularly by 1% or more of the Great Britain (or in Northern Ireland, the all-Ireland) population of a species listed in Annex 1 of the Birds Directive in any season.

2. An area is used regularly by 1% or more of the biogeographical population of a regularly occurring migratory species (other than those listed in Annex 1) in any season.

3. An area is used regularly by over 20,000 waterfowl (as defined by the Ramsar Convention) or 20,000 seabirds in any season.

4. An area which meets the requirements of one or more of the Stage 2 guidelines in any season, where the application of Stage 1 guidelines 1, 2, or 3 for a species does not identify an adequate suite of most suitable sites for the conservation of that species.

Stage 2 (to select the most suitable areas in number and size for SPA classification) has seven site criteria:

1. Population size and density – areas holding or supporting more birds than others and/or holding or supporting birds at higher concentration are favoured for selection.

2. Species range – areas selected for a given species provide as wide a geographic coverage across the species’ range as possible.

3. Breeding success – areas of higher breeding success than others are favoured for selection.

4. History of occupancy – areas known to have a longer history of occupancy or use by the relevant species are favoured for selection.

5. Multi-species areas – areas holding or supporting the larger number of qualifying species under Article 4 of the Directive are favoured for selection;

6. Naturalness – areas comprising natural or semi-natural habitats are favoured for selection over those which do not.

7. Severe weather refuges – areas used at least once a decade by significant proportions of the biogeographical population of a species in periods of severe weather in any season, and which are vital for the survival of a viable population, are favoured for selection.

Appendix 2. Additional observations

Consideration and discussion around the development of these criteria has raised several issues relevant to the mechanisms of affording protection to colonies of birds in Antarctica. These are recorded below to aid further discussion.

1. **Marine foraging areas**. Pressures being faced by some species may be most significant at foraging (rather than ‘breeding’) locations. In such cases, the best conservation outcomes may not always be achieved by protecting terrestrial breeding colonies; though such designation can help to avoid additional pressures on certain species or populations. It is noted that BirdLife International has identified a series of marine IBAs south of 60o South, most of which are in the Antarctic Peninsula region (see: <https://maps.birdlife.org/marineIBAs>). This information has not been brought to the attention of or considered by the CEP, though has been considered by SC-CAMLR’s WG-EMM (<https://www.ccamlr.org/en/wg-emm-2019/30>). It is also noted that CCAMLR has identified some foraging distributions for some species in the process of preparing MPA proposals. It may be appropriate for the CEP and SC-CAMLR to discuss whether further work on marine foraging areas might be needed and if so within which body.
2. **Cooperation with other bodies**. Cooperation with other relevant international fora should be considered in the protection and conservation of seabirds, including CCAMLR, the Agreement on the Conservation of Albatross and Petrels (ACAP) and the Convention on Migratory Species (CMS) as appropriate.
3. **Research and Monitoring**. Research and monitoring is being undertaken to collect Antarctic bird population data including from remote sensing platforms as well as on-the-ground censuses (e.g. the Antarctic Site Inventory), though it is important that collected data is made readily available to environmental managers to support ongoing consideration of management options. Spatial and temporal population data remains extremely patchy, and there is a pressing need for Governments to consider ways to improve population monitoring across Antarctica[[13]](#footnote-13).
4. **Ongoing application of criteria**. Criteria (including the IBA criteria) will likely need to be revisited over time as new data and information become available. This will include population and location-specific data, as well as genetic data which may assist in better descriptions of cryptic species (e.g. Antarctic prions). This could also include situations where new colonies are discovered e.g. through remote sensing[[14]](#footnote-14),[[15]](#footnote-15) as well as on-the-ground surveys.
5. **Threats**. Account needs to be taken of the threats to a species in considering options for protection. Threats can be species specific, for example some bird species demonstrate an ability to adapt to climate change pressures, whereas others may struggle to do so. Threats (impacts) can be direct, indirect and cumulative and a full assessment is needed to ensure appropriate management measures are utilised. Threats may directly or indirectly result from:

* environmental change, including habitat loss (could be habitat gain in same cases) and effects on food availability;
* human activity e.g. logistics, science, tourism, infrastructure development and fishing.

Consideration may also need to be given to the susceptibility of a species to future threats e.g. increased susceptibility to disease as a result of increased stress as a consequence of climate change and other pressures.

1. **Birds as indicators of broader biodiversity values**. BirdLife International has developed its assessment approach over time and now recognises ‘Important Bird and Biodiversity Areas’ as a component of identifying and protecting ‘Key Biodiversity Areas’[[16]](#footnote-16). In time, the CEP and Antarctic Treaty Parties, may need to give consideration to systematically assessing and identifying broader scale ecological management units, ecosystems, and/or habitats within the Antarctic protected area system that integrate and account for a range of biodiversity values.

1. The term ‘bird areas’ is used throughout this document, which is intended to include ‘colonies’ of birds, which is appropriate for many Antarctic breeding species which aggregate very strongly when breeding, as well as other locations where birds such as snow petrels and Wilsons storm petrels, only loosely aggregate when breeding. The term ‘colony’ is used when it clearly applies to a certain species or when referring to Article 3(2)(c) of Annex V to the Protocol which uses this term. [↑](#footnote-ref-1)
2. Harris, C.M., Lorenz, K., Fishpool, L.D.C., Lascelles, B., Cooper, J., Croxall, J.P., Emmerson, L.M., Fijn, R., Fraser, W.L., Jouventin, P., LaRue, M.A., Le Maho, Y., Lynch, H.J., Naveen, R., Patterson-Fraser, D.L., Peter, H.-U., Poncet, S., Phillips, R.A., Southwell, C.J., van Franeker, J.A., Weimerskirch, H., Wienecke, B., & Woehler, E.J. 2015. *Important Bird Areas in Antarctica 2015 Summary*. BirdLife International and Environmental Research & Assessment Ltd., Cambridge. [↑](#footnote-ref-2)
3. See for example: Trathan, P.N., Wienecke, B., Barbraud, C., Jenouvrier, S. et al. 2020. The emperor penguin - Vulnerable to projected rates of warming and sea ice loss. Biological Conservation, 241 <https://doi.org/10.1016/j.biocon.2019.108216> [↑](#footnote-ref-3)
4. Harris, C.M., Lorenz, K., Fishpool, L.D.C., Lascelles, B., Cooper, J., Croxall, J.P., Emmerson, L.M., Fijn, R., Fraser, W.L., Jouventin, P., LaRue, M.A., Le Maho, Y., Lynch, H.J., Naveen, R., Patterson-Fraser, D.L., Peter, H.-U., Poncet, S., Phillips, R.A., Southwell, C.J., van Franeker, J.A., Weimerskirch, H., Wienecke, B., & Woehler, E.J. 2015. *Important Bird Areas in Antarctica 2015 Summary*. BirdLife International and Environmental Research & Assessment Ltd., Cambridge. [↑](#footnote-ref-4)
5. See for example: Southwell, C., Emmerson, L., Takahashi, A., Barbraud, C., Delord, K. and Weimerskirch, H. 2017. Large-scale population assessment informs conservation management for seabirds in Antarctica and the Southern Ocean: A case study of Adelie penguins. Global Ecology and Conservation, 9, 104-115. http://dx.doi.org/10.1016/j.gecco.2016.12.004 [↑](#footnote-ref-5)
6. See for example: Handley J., Rouyer M-M., Pearmain E.J., Warwick-Evans V., Teschke K., Hinke J.T., Lynch H., Emmerson L., Southwell C., Griffith G., Cárdenas C.A., Franco A.M.A., Trathan P. and Dias M.P. 2021. Marine Important Bird and Biodiversity Areas for Penguins in Antarctica, Targets for Conservation Action. Front. Mar. Sci. 7:602972. doi: 10.3389/fmars.2020.602972 [↑](#footnote-ref-6)
7. Information drawn from Hall, R. 2007. Overview of criteria that may be used in the development of new criteria for the identification of internationally important breeding sites critical for species listed in Annex 1 of ACAP. Paper presented as AC3 Doc 19 Rev. 1 to the Third Meeting of the ACAP Advisory Committee, Valdivia, Chile, 19-22 June 2007. [↑](#footnote-ref-7)
8. Ramsar Regional Center – East Asia. (2017). The Designation and Management of Ramsar Sites – A practitioner’s guide. Available at **www.ramsar.org** and **www.rrcea.org** [↑](#footnote-ref-8)
9. The RAMSAR criteria place emphasis on ‘critical stages of life cycles’. For Antarctic seabirds, moulting is an important stage of the life cycle. Moulting sites tend to be more spatially dispersed than breeding sites, so considering them in IBA identification or ASPA designation might not be practical, though aspects related to birds’ non-breeding needs are also ‘important’. [↑](#footnote-ref-9)
10. Fishpool, L.D.C. & Evans, M.I. (eds) (2001) *Important Bird Areas in Africa and associated islands. Priority sites for conservation*. Pisces Publications, Cambridge: BirdLife International. [↑](#footnote-ref-10)
11. Harris, C.M., Lorenz, K., Fishpool, L.D.C., Lascelles, B., Cooper, J., Croxall, J.P., Emmerson, L.M., Fijn, R., Fraser, W.L., Jouventin, P., LaRue, M.A., Le Maho, Y., Lynch, H.J., Naveen, R., Patterson-Fraser, D.L., Peter, H.-U., Poncet, S., Phillips, R.A., Southwell, C.J., van Franeker, J.A., Weimerskirch, H., Wienecke, B., & Woehler, E.J. 2015. *Important Bird Areas in Antarctica 2015 Summary*. BirdLife International and Environmental Research & Assessment Ltd., Cambridge. [↑](#footnote-ref-11)
12. Available from: https://jncc.gov.uk/our-work/special-protection-areas-overview/ [↑](#footnote-ref-12)
13. Of relevance to long-term / adaptive monitoring see: Lindenmayer, D.B. and Likens, G.E. 2009. Adaptive monitoring: a new paradigm for long-term research and monitoring. Trends in Ecology and Evolution, 24(9) pp482-486. https://doi.org/10.1016/j.tree.2009.03.005 [↑](#footnote-ref-13)
14. Borowicz, A., McDowall, P., Youngflesh, C., Sayre-McCord, T., Clucas, G., Herman, R., Forrest, S., Rider, M., Schwaller, M., Hart, T., Jenouvrier, S., Polito, M.J., Singh, H. and Lynch, H.J. 2018. Multi-modal survey of Adélie penguin mega-colonies reveals the Danger Islands as a seabird hotspot. Science Reports 8, 3926. 10.1038/s41598-018-22313-w [↑](#footnote-ref-14)
15. Schwaller, M.R., Lynch, H.J., Tarroux, A. and Prehn, B. 2018. A continent-wide search for Antarctic petrel breeding sites with satellite remote sensing. Remote Sensing of Environment, 210, pp444-451. https://doi.org/10.1016/j.rse.2018.02.071 [↑](#footnote-ref-15)
16. Key Biodiversity Areas (KBAs) – sites that contribute to the global persistence of biodiversity, including vital habitat for threatened plant and animal species in terrestrial, freshwater and marine ecosystems.

    Important Bird and Biodiversity Areas (IBAs) – KBAs identified for birds using internationally agreed criteria applied locally by BirdLife Partners and experts [↑](#footnote-ref-16)