



**CONVENTION ON
MIGRATORY
SPECIES**

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Agenda Item 27

DISAGGREGATION OF BIRD FAMILIES AND GENERA LISTED UNDER APPENDIX II

(Submitted by the Scientific Council)

Summary:

This document is a revision of document [UNEP/CMS/ScC-SC4/Doc.11.3.2](#), prepared by Stephen Garnett, COP-appointed Councillor for Birds for the consideration of the 4th meeting of the Sessional Committee of the Scientific Council. The revision takes into account the review undertaken by the Sessional Committee.

Appendix II of the CMS lists 63 bird families and three genera rather than individual species. Using the taxonomy adopted by the 12th Meeting of the Conference of the Parties (COP12) as the standard for CMS, it was determined that these families and genera contain 2,822 species. Of these, 54 are already listed on Appendices I or II; 832 occur in a single country; 755 species occur in more than one country but do not move cyclically and predictably across one or more national jurisdictional boundaries; 896 do cross boundaries cyclically and predictably but do not have an unfavourable conservation status as species using the IUCN Red List criteria, leaving 85 species with characteristics of mobility and conservation status usually considered consistent with listing on Appendix II. The Scientific Council offers to develop advice on the advantages and disadvantages of different approaches to listing the 2,822 species for presentation to COP14.

DISAGGREGATION OF BIRD FAMILIES AND GENERA LISTED UNDER APPENDIX II

1. Through adoption of [Resolution 12.27 Taxonomy and Nomenclature](#) the 12th Meeting of the Conference of the Parties agreed to recognize and use as the basis on which the CMS Appendices and amendments be adopted as the standard references for Non-passerine species the list of del Hoyo, J. & Collar, N.J. (2014). Handbook of the Birds of the World and BirdLife International Illustrated Checklist of the Birds of the World. Volume 1: Non- passerines. Lynx Edicions, Barcelona and, for Passerine species, the list of del Hoyo, J. & Collar, N.J. (2016). Handbook of the Birds of the World and BirdLife International Illustrated Checklist of the Birds of the World. Volume 2: Passerines. Lynx Edicions, Barcelona.
2. As a consequence of this resolution, 2,809 species were identified as belonging to the disaggregated bird families listed under Appendix II of CMS. Of these 50 have already been listed as species under Appendix II.
3. Assessments were made of the remaining 2,759 species using the listing criteria agreed at COP11, which form the basis of the *Guidelines for Assessment of Appendix I and II Listing Proposals* ([Resolution 11.33 \(Rev.COP12\)](#)) (details on the assessment of individual species are provided in Annex 3 to this document).
4. To help clarify which of the 2,759 species might be eligible for listing under Appendix II, a three-step process was followed:
 - i. The distributional databases of BirdLife International and Avibase were interrogated to determine whether species occur in more than one country;
 - ii. For those that do, the extent of overlap between breeding and non-breeding ranges was assessed to determine whether there is potential for a significant proportion of the members of a species to move cyclically and predictably cross one or more national jurisdictional boundaries (more details on the methodology are provided in Annex 1 to this document);
 - iii. The IUCN Red List status of each species was identified.
5. Of the 2,759 species, 832 species in the disaggregated families are endemic to a single country.
6. A further 754 species are sedentary species for which there is no evidence that a significant proportion of the population cyclically and predictably crosses one or more national jurisdictional boundaries.
7. Article IV of the Convention also states that Appendix II shall list migratory species which have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international co-operation that could be achieved by an international agreement. According to the *Guidelines for Assessment of Appendix I and II Listing Proposals* included in Resolution 11.33 (Rev.COP12), a taxon assessed as 'Extinct in the Wild', 'Critically Endangered', 'Endangered', 'Vulnerable' or 'Near Threatened' using the IUCN Red List criteria will be eligible for consideration for listing in Appendix II; recognizing that such taxa meet the definition of 'unfavourable conservation status' under the Convention. A taxon assessed as 'Data Deficient' using the IUCN Red List criteria should be evaluated in terms of the merit of any individual Appendix II proposal.

8. In the disaggregated families, 2,155 species are listed as Least Concern under the IUCN Red List criteria, so it might be assumed that they do not have an unfavourable conservation status. Among these Least Concern species are 1,260 species for which a significant proportion of the population does not cyclically and predictably cross one or more national jurisdictional boundaries.
9. While the current guidelines to assess listing proposals suggest that a species assessed as Least Concern should normally not be considered for listing, the guidelines that apply to new proposals do not automatically apply to this disaggregation exercise, though they can inform it. This consideration is particularly relevant to the 895 species that are Least Concern but with a significant proportion of the population cyclically and predictably crossing one or more national jurisdictional boundaries.
10. Also included among species in aggregated families under Appendix II but which appear not to meet CMS guidelines for listing under Appendix II are 134 species listed under other CMS instruments. Of these, 132 have a significant proportion of the population cyclically and predictably crossing one or more national jurisdictional boundaries but do not have an unfavourable conservation status. Of the remaining two species, the Vulnerable Maccoa Duck *Oxyura maccoa* moves only within South Africa and the Near Threatened Mountain Buzzard *Buteo oreophilus* is sedentary.
11. The remaining 83 species belong to disaggregated families, meet the CMS movement criteria, are not Extinct and have an unfavourable conservation status. Information on these species is compiled in Annex 2 to this document.
12. In addition to the disaggregated families, the family Gruidae has three genera that are aggregated under Appendix II – *Antigone*, *Anthropoides* and *Grus* of which two species meet the CMS criteria, are not already listed as species on the Appendix and have an unfavourable conservation status: Asian populations of *Antigone antigone* and *Grus americana* (see Annex 2).
13. Of the four species in the genus *Antigone*, *A. vipio* is listed under Appendix I but not Appendix II, *A. canadensis* is highly migratory but Least Concern; *A. rubicunda* may cross international borders but is also Least Concern; and *A. antigone* is Vulnerable and has two subspecies that meet the CMS movement criteria but a third subspecies, *A. a. gillae*, is endemic to Australia so Australia should not be considered a range state for this species.
14. Of the two species of *Anthropoides*, a significant proportion of the population of *A. paradiseus* does not cross international borders; and *A. virgo* is highly migratory but Least Concern. *A. virgo* is included on the Annex of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA).
15. Of the five species in the genus *Grus*, *G. japonica*, *G. monacha* and *G. nigricollis* are listed under Appendix I but not Appendix II; *G. americana* is highly migratory and Endangered; and *G. grus* is highly migratory but is Least Concern. *G. grus* is included on the Annex of AEWA.
16. Following discussion of the document [UNEP/CMS/ScC-SC4/Doc.11.3.2](#) on the disaggregation of bird families and genera listed under Appendix II, the Sessional Committee of the Scientific Council:
 - i. Agreed that it is better to have a list of species in place of aggregated families and genera;
 - ii. Endorsed the approach taken by the COP-appointed Councillors for Birds to
 - disaggregation of the families

- assessing whether the species in the formerly aggregated families and genera are species for which 'a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries';
- iii. Agreed that further work is required before it can be in a position to provide a considered opinion to the Conference of the Parties on the advantages and disadvantages of the various ways of treating the species currently aggregated under families or genera under Appendix II;
- iv. Offered to work inter-sessionally following COP13 to provide advice to the Conference of the Parties at its 14th meeting.

Recommended actions

17. The Conference of the Parties is recommended to:
- a) take note of this document, including its annexes;
 - b) consider the offer of the Scientific Council to work in the inter-sessional period to provide advice to the Conference of the Parties at its 14th meeting on the advantages and disadvantages of the various ways of treating the species currently aggregated under families or genera under Appendix II.

ANNEX 1

**METHODS USED TO CHARACTERISE MIGRATORY MOVEMENTS OF BIRDS FOR THE
PURPOSE OF DISAGGREGATING FAMILIES UNDER APPENDIX II
OF THE CONVENTION ON MIGRATORY SPECIES**

The increasing quantity and quality of tracking data becoming available is revealing that, for individual animals, there is a wide range of individual movement strategies depending on a range of internal and external drivers of behaviour. Even among species commonly characterised as sedentary, individuals can demonstrate patterns of movement that vary over temporal and spatial scales that defy easy categorisation into migratory or non-migratory, or, to use the definition of the CMS: "Migratory species" means the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries. In order to characterise migratory movements of birds for the purpose of disaggregating families, movements were therefore characterised in terms of the relative overlap in the areas occupied by a species within and between breeding seasons. Using range overlap as a framework, movements can be described as having four forms:

- i. sedentary species whose ranges completely overlap between breeding and non-breeding seasons and from one breeding and non-breeding season to the next
- ii. migratory species with separate breeding and non-breeding ranges but with the same breeding and non-breeding ranges from one breeding and non-breeding season to the next
- iii. nomadic species in which the breeding and/or non-breeding ranges vary from one breeding or non-breeding season to the next
- iv. intermediate forms labelled partial migrants or partial nomads which may take many forms

Bird species or populations which follow any of the first three mobility patterns are easy to characterise. The fourth, however, is very common but includes within it many forms of partial range overlap along two gradients:

Mobility: overlap in range between breeding and non-breeding seasons

Philopatry: overlap in range from one breeding season to the next and from one non-breeding season to the next

Category i above is at one end of each of these gradients but categories ii and iii can be conceptualised as being at the terminus of just one of these gradients. Just where different bird species lie along these different gradients can be helpful for their conservation management but, given the level of knowledge about seasonal range shifts of birds, each gradient can usefully be split into four classes.

For *mobility* the overlap between breeding and non-breeding ranges for each species was classified into one of the following four classes, where known:

- a. 0% (none)
- b. >0%-50%
- c. >50%-<100%
- d. 100% (complete)

which then combine into nine mobility types (Figure 1)

Mobility

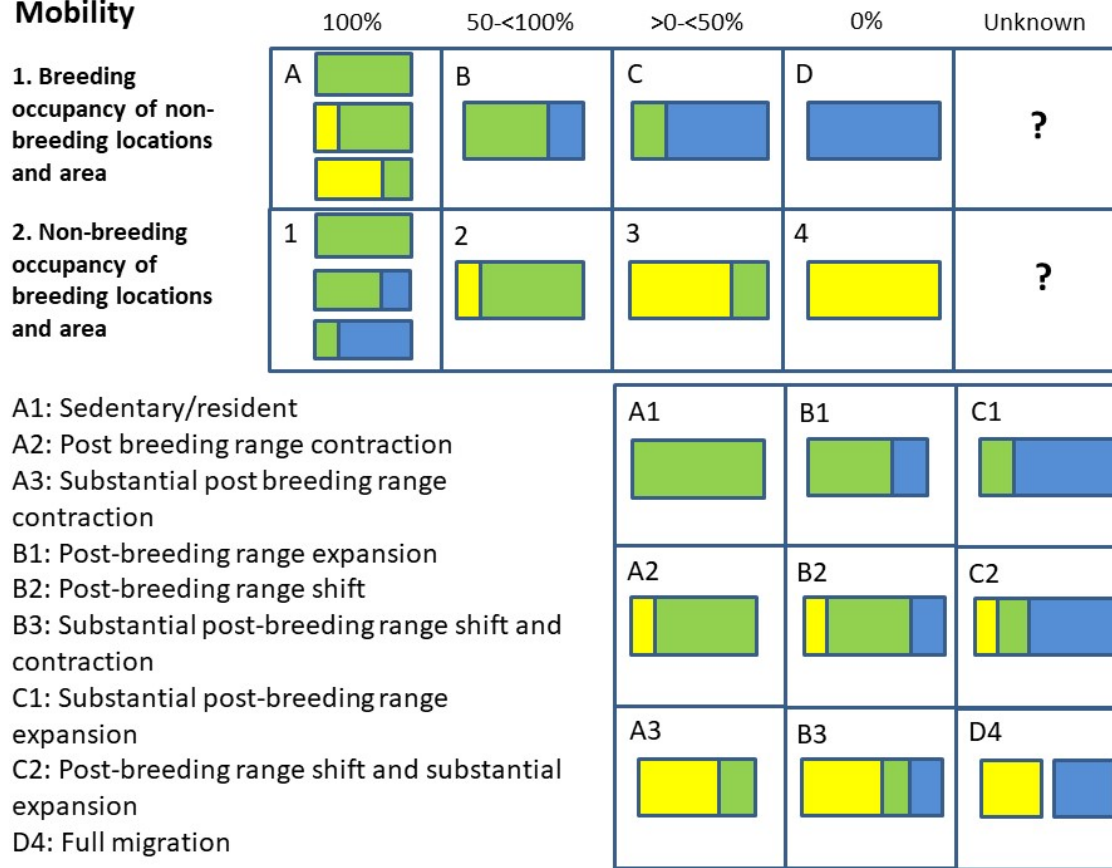


Figure 1. Categories of mobility. Green areas are occupied in both breeding and non-breeding seasons, yellow areas are only occupied in the breeding season, blue areas only in the non-breeding season.

For *philopatry* the overlap in ranges from one breeding or non-breeding season to the next was classified into one of the following four classes, where known:

- a. There is a >95% overlap in breeding and/or non-breeding ranges between season 1 and season 2;
- b. There is a 5-<50%% overlap in breeding and/or non-breeding ranges between season 1 and season 2;
- c. There is a 50-95% overlap in breeding and/or non-breeding ranges between season 1 and season 2;
- d. There is a <5% overlap in breeding and/or non-breeding ranges between season 1 and season 2.

which then form eight mobility types (Figure 2)

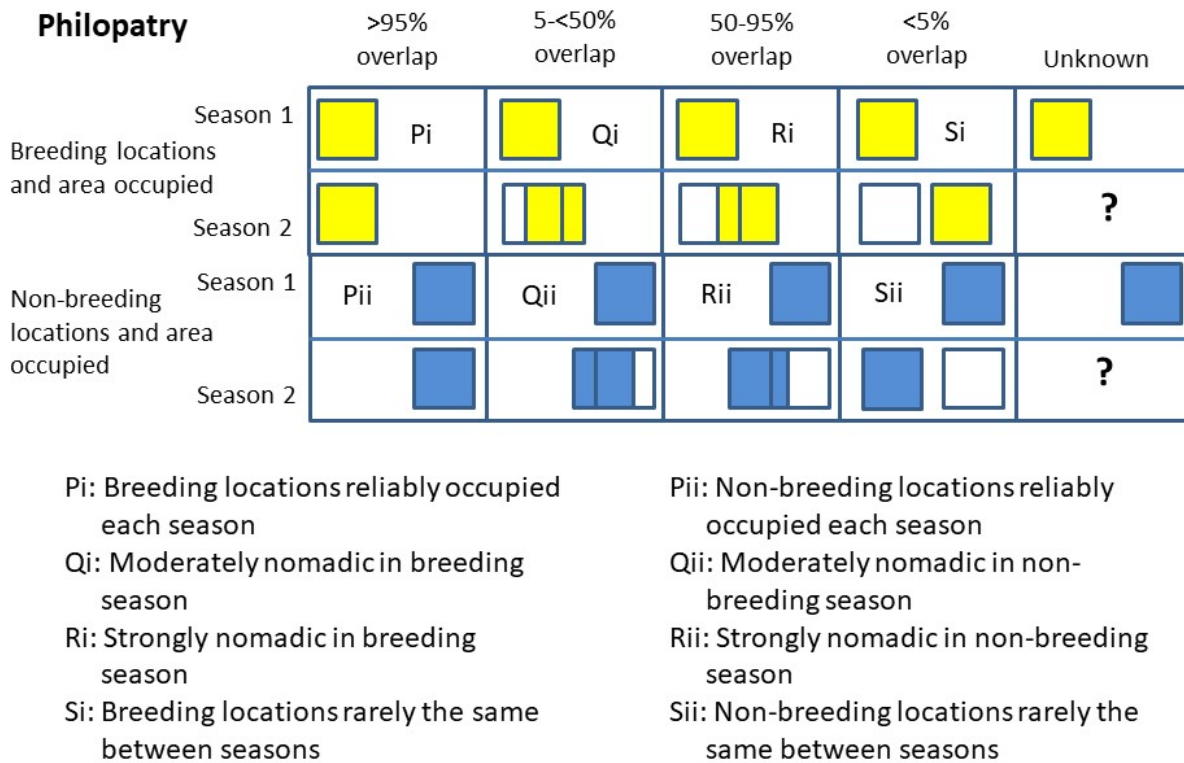


Figure 2. Categories of philopatry. Yellow areas are occupied in the breeding season, blue areas in the non-breeding season, white areas are unoccupied in that season.

Combining mobility and philopatry categories provides 81 different classes of seasonal and inter-seasonal movement into which birds can be placed, although, in practice most birds fit into a small subset of these categories and the exceptions often differ from most other birds in other ways. Having developed a framework for categorising mobility, a review was undertaken of the mobility patterns of all 11,126 species of birds currently recognised by BirdLife International, including of all species aggregated in families under Appendix II. To do this the Handbook of the Birds of the World (del Hoyo and Collar 2014 and 2016) was interrogated for summaries of movement patterns with additional species-specific ornithological literature as necessary for clarification. In addition, the online resource e-Bird (<https://ebird.org/>) was consulted because it allows exploration of seasonal changes in areas occupied. The following information was then scored for each species:

1. The proportion of the non-breeding range occupied during the breeding season (none, >0%-50%, >50%-<100%, 100%, unknown, level of confidence in assessment);
2. The proportion of the breeding range occupied during the non-breeding season (none, >0%-50%, >50%-<100%, 100%, unknown, level of confidence in assessment);
3. The proportion of the range occupied in one breeding season that is also occupied the following breeding season (>95%, 5-<50%, 50-95%, <5%, unknown, level of confidence in assessment);
4. The proportion of the range occupied in one non-breeding season that is also occupied the following non-breeding season (>95%, 5-<50%, 50-95%, <5%, unknown, level of confidence in assessment);

Confidence was characterised by the language used to describe movements or from the strength of evidence from online sources:

- very low: 'no data', 'unknown' etc.;
- low: 'no information but..', 'poorly known except...' e.g. 'local movements unlikely', 'altitudinal movement suspected'
- medium: 'presumably/presumed resident, 'no movements/nothing recorded' or 'known', 'apparently'... e.g. 'resident, absent from..' etc.
- high: 'probably', 'primarily', 'thought to be', 'generally', 'apparently mainly' etc.
- very high: definitive words like 'sedentary', 'resident', 'full migrant'

For the lowest category where there was no information available, a category could sometimes be provided by assessing: habitat preferences and extent of habitat available, spatial and/or temporal patterns of whatever observations were available; movement patterns of relatives with a similar ecology;

5. Evidence of movement of juveniles/immatures beyond the areas occupied by adults, which was categorised for confidence that the range does extend beyond that of adults, the regularity of locations (>95% of the locations and area occupied the same each year; 50-95%; 5-49%; <5%, unknown) and extent (<100 km, 100-1,000 km, >1,000 km, unknown, confidence);
6. Evidence of movements that could be considered irruptive or altitudinal;
7. Directionality of most movements (north-south, east-west, multi/non-directional);
8. Distance travelled by most birds in populations that do move (<100 km, 100-1,000 km, >1,000 km, unknown, confidence);
9. For partial movements, (i) whether most birds move (range shift), (ii) some birds overfly sedentary populations, (iii) whether some populations are sedentary and some mobile with confidence for each;
10. Confidence that some portion of the population crosses international boundaries;
11. Whether the border crossing occurs cyclically (yes/no);
12. Whether the border crossing could be considered as occurring predictably (yes/no).