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**CMS SCIENTIFIC COUNCIL
FLYWAYS WORKING GROUP REVIEWS****EXECUTIVE SUMMARY****REVIEW 2****REVIEW OF CURRENT KNOWLEDGE OF BIRD FLYWAYS, PRINCIPAL
KNOWLEDGE GAPS AND CONSERVATION PRIORITIES**

Executive summary

A review of current knowledge for migratory birds at the flyway scale, including threats, has been undertaken, from which conservation priorities and recommendations are identified.

The many different types of migration that birds undertake are first described as well as the flyways and strategies that they use to complete their migratory journeys. The great complexity in bird migration is evident and brings with it a requirement for a multitude of conservation approaches. International collaboration is a key element in any strategy for migratory bird conservation and the signatories to the Convention on Migratory Species (CMS) have a key role to play.

Analysis of status and trends was carried out for a total of 2,274 CMS-defined migratory species (23% of the world's birds). Migratory birds are found in all regions of the world, however, the Americas and Asian regions stand out with more than 1,000 species each.

At a global level, 14% (317) of the included species are currently considered threatened or near-threatened according to the IUCN Red List. Since 1988, 53 species have deteriorated in status (sufficiently to be uplisted to higher categories of extinction risk on the IUCN Red List) while only nine species have improved (sufficiently to be downlisted to lower categories). Listing of species on CMS appendices (these being species identified as deserving of specific attention) does not yet appear to have resulted in an improvement in overall status.

There is increasing evidence of regional declines, although regional and taxonomic differences exist. Population trend data show that more Nearctic–Neotropical migrants have declined than increased in North America since the 1980s, and more Palearctic–Afrotropical migrants breeding in Europe declined than increased during 1970–2000. The East Asia–Australasia region has the highest proportion of threatened migratory waterbirds (20%); Africa–Eurasia, Central Asia and East Asia–Australasia having the highest proportions of threatened soaring birds (c.30% each); and the Americas, Africa–Eurasia and East Asia–Australasia the highest proportions of threatened seabirds (c.30%). Overall, the East Asia–Australasia region having the highest proportion of threatened migratory birds in all categories and is under enormous pressures with some 45% of the world's human population as well as the fastest-growing economies. On a flyway scale, the East Asia–Australasia flyway has the highest proportion of threatened migratory waterbirds (19%), and the highest proportions of threatened soaring birds (24–34%) was recorded for the Black Sea–Mediterranean, East Asia–East Africa, Central Asia and East Asia–Australasia flyways. These and other data reviewed indicate that a significant proportion of migratory birds are at high risk and have an unfavourable conservation status.

Analysis of the main threats to migratory species evaluated as threatened and near-threatened on the 2010 IUCN Red List shows that important threats include land-use change, illegal hunting and taking, non-native species, diseases, pollution, climate

change, natural system modifications, infrastructure development, human disturbance, fishing, energy production and distribution. Published literature on key threats has been collated and reviewed.

Key information needs are identified that relate to our knowledge of the status, trends and threats to migratory bird species, and information needed in order to more effectively pursue their conservation. These include the continuing need for robust information on status and trends, distribution and ecology, and for further information on the wide variety of threats to migratory birds.

There is a need to determine the 'ideal' landscape for migratory birds in each geographical region of the world, where landscape-scale conservation is key to the protection of migratory birds. To facilitate migratory movements, it is vital to find ways to improve the connectivity of habitats critical to population survival currently and in the future. A continuation of monitoring and research into the impacts of climate change on migratory species, as well as the ability of species and populations to adapt, remains important. This knowledge is vital to identify key limiting factors, the 'weakest link', upon which each species' survival hinges, and to provide essential building blocks for policy guidance.

Conservation priorities have been identified that address the key identified threats. Protection of habitats, and the resources they provide, is identified as being of vital importance to migratory birds, and this should be afforded the highest priority of all.

Migratory species that depend on a network of sites along their flyways will strongly benefit from the proper protection and management of these sites. The degree of protection afforded to network sites is at present insufficient. Effective management of key sites for migratory birds needs to address the whole range of factors that cause direct mortality (e.g. hunting, trapping, collisions, predation, pollution etc.), and those that reduce food supplies or destroy or degrade habitats. Best practice habitat management needs to be shared.

Specific threats highlighted by this review that are of particular significance for migratory birds include: wind turbine developments; power line collisions and electrocutions; illegal trapping and shooting; reclamation of wetlands; and pollution, overfishing and the by-catch of seabirds during long-line and trawl fishing operations. These threats are identifiable and will need continued effort to address particular impacts on particular species.

Climate change impacts are likely to be critical for a range of migratory birds and this defines climate change adaptation as one of the key conservation priorities for coming years. A network of critical sites, not least along the world's flyways, is likely to maximise the potential of migratory birds to adapt to climate change.

A total of 72 specific recommendations for action were generated on the basis of this review but not all will be applicable to all engaged in migratory bird conservation world-wide. Thus, eight key recommendations are provided for CMS to consider, each crucial to improving the fortunes of the world's migratory birds.

Key recommendations from the review

A total of 72 specific recommendations for action were generated on the basis of this review (see Annex 5) and there is no doubt that others could be identified. Not all of these will be applicable to all engaged in migratory bird conservation world-wide. Similarly, not all will be relevant to all migratory bird groups and the different specialist groups focusing on their particular conservation requirements.

From the full list of recommendations a more focused selection of key recommendations have been identified for broadscale action, as follows:

1. *Ensuring effective implementation:* With 14% of migratory bird species considered globally threatened or near-threatened, nearly 40% declining overall, and extinction risk increasing (including for those species specifically listed on CMS appendices and related agreements), continuing effective implementation of existing conservation efforts under CMS auspices remains an urgent priority.
2. *Reviewing CMS species selection:* With nearly 800 migratory bird species (35% of the total considered in this review) explicitly covered by different elements of the Convention, there is already considerable taxonomic coverage. However, additional consideration should be given to selected species with the highest extinction risk not currently listed on the appendices or its instruments. In addition, specific consideration should be given to declining species or groups of species that would complement / add to existing initiatives where CMS is well placed to extend its current remit. Species should only be chosen after careful review and ideally chosen as flagships whose conservation will address wider issues.
3. *Covering flyways:* With many flyway-scale conservation initiatives already established by CMS and other international collaborations and partnerships, there is already considerable geographic coverage of migratory species. For CMS, the East Asia–Australasia region deserves particular attention on account of the high proportion of threatened migratory bird species (waterbirds, soaring birds and seabirds) found there.

Selected species groups not currently listed on CMS appendices or other instruments

Species Group	Region	Total number species	Number (%) declining	Number (%) threatened or near-threatened
Petrels, shearwaters ¹	Global	74	38 (51%)	27 (37%)
Waterbirds ²	East Asia–Australasia	61	23 (38%)	15 (25%)
Storks / Ibises ²	East Asia	8	5 (63%)	5 (63%)
Bustards / Floricans	Africa–Eurasia, C. Asia, E. Asia	4	4 (100%)	4 (100%)
Pigeons / Parrots	East Asia–Australasia	65	22 (34%)	11 (17%)
Pigeons / Parrots	Americas	61	25 (41%)	15 (25%)
Passerines ³	Americas	434	133 (31%)	25 (6%)
New world ³ warblers	Americas	50	22 (44%)	4 (8%)
Passerines	Africa–Eurasia	188	64 (34%)	3 (2%)
Passerines	Central Asia	125	46 (37%)	0 (0%)
Passerines	East Asia–Australasia	315	93 (30%)	10 (3%)
Larks	Africa–Eurasia, C. Asia, E. Asia	33	15 (46%)	0 (0%)

Notes The species groups above were identified on the basis of four or more declining species facing similar threats and none currently listed on CMS appendices or associated instruments. 1. 29 species of albatrosses and petrels are already covered by ACAP. 2. These species are technically covered by the East Asian–Australasian Flyway Partnership but not specifically listed. 3. These species are covered by the ‘Partners in Flight’ initiative.

4. *Addressing issues at the broad scale:* With threats especially from agriculture leading to habitat degradation and destruction having the greatest impact on migratory species, addressing issues at the wider landscape scale remains a considerable challenge. In this review, some specific terrestrial habitats have been identified as deserving of particular attention, including:
 - a. halt conversion of *intertidal wetlands in East Asia*, especially in the Yellow Sea
 - b. protect remaining *lowland forest in South-East Asia* from conversion to plantation agriculture
 - c. reform the Common Agricultural Policy to promote *diverse farmlands in the European Union* that supports biodiversity and rural livelihoods.
 - d. support efforts to reduce and reverse desertification and loss of flood plain habitat in the *drylands of the African Sahel*, using approaches

- that protect and restore native vegetation and conserve natural flood regimes
- e. protect remaining *lowland and montane forests in Central America and the tropical Andes*
 - f. protect key *grasslands in South America* and maintain traditional, extensive grassland ranching practices.
5. *Conserving important sites*: With increasing recognition of the importance of critical sites for migratory birds during breeding, non-breeding and on passage, and their poor protection (e.g. 56% of 8,400 Important Bird Areas having less than 10% of their area formally protected), it is a priority to ensure identification and effective management of a network of sites along migration flyways as a whole, including:
- a. supporting the development of flyway-scale networks such as the Western Hemisphere Shorebird Reserve Network in the Americas, the East Asian–Australasian Flyway Site Network and the West / Central Asian Site Network for Siberian Cranes and other waterbirds [and its expansion to the Central Asian Flyway Site Network for Migratory Waterbirds \(as is called for in the CMS CAF Action Plan\)](#), and through applying the critical site network approach (as developed by the ‘Wings over Wetlands’ Project) to other regions and taxonomic groups
 - b. listing important sites on CMS instruments for particular attention / management plans (as is currently done under the Agreement on the Conservation of Albatrosses and Petrels and the Memorandum of Understanding on the Conservation of Migratory Birds of Prey in Africa and Eurasia)
 - c. supporting the listing of sites by improving knowledge of site and habitat use by birds
 - d. evaluating the effectiveness of current protection / management of sites
 - e. seeking protection of sites through formal designations or voluntary measures.
6. *Tackling species-specific issues*: With migratory bird species facing a multitude of complex, often interacting, threats, it would be important for CMS to focus on those where CMS can add value and / or is / could be a leader of best practice, including:
- a. addressing unsustainable trapping and shooting, ensuring full implementation and adherence to hunting regulations, including in the Mediterranean basin, the Sahel, [Central Asia, the Middle East and the coastal wetlands of East Asia](#)
 - b. ensuring best practice, and exercising extreme caution, in the location and construction of man-made structures in sensitive areas for migratory birds, especially wind turbines and power transmission and telecommunication infrastructure.

7. *Facilitating international cooperation:* Given that efforts to conserve migratory birds in one part of the range are less effective if unaddressed threats are reducing populations and habitats along migration flyways as a whole, international collaboration and coordinated action are key elements in conserving migratory birds, including, for example:
 - a. mainstreaming migratory bird issues through other UN conventions and institutions, including the Convention on Biological Diversity, United Nations Framework Convention on Climate Change, United Nations Convention to Combat Desertification, the Convention for the Prevention of Marine Pollution and the Food and Agriculture Organisation
 - b. supporting and strengthening implementation of relevant regional conventions and initiatives, e.g. the Abidjan and Nairobi Conventions through the African Ministerial Conference on the Environment and the Africa Union, and the *Alliances* initiative for the conservation of the South American Southern Cone grasslands
 - c. supporting the Agreement for the Conservation of Albatrosses and Petrels (ACAP) to address bycatch of seabirds during long-line and trawl fishing operations, including in international waters
 - d. coordinating and implementing action across critical site networks
 - e. conserving important trans-boundary sites
 - f. coordinating and adhering to international legal protection for globally threatened and declining species.

8. *Supporting monitoring:* In order to detect declines early and implement appropriate action rapidly, it is recommended that CMS uses its influence to promote monitoring of migratory bird populations and their habitats across all its projects and programmes (including, e.g., through Important Bird Area and International Waterbird Census coordinated monitoring).