

Strategic Plan for Migratory Species 2015–2023 - Progress Report

The Strategic Plan for Migratory Species 2015–2023 (SPMS) aims to ensure a coordinated and coherent approach to migratory species conservation. The Plan is structured around five goals, under which are provided 16 targets that define the priorities and clarify what constitutes successful performance towards the goals. To track progress, CMS COP12 agreed a suite of indicators for assessing specific aspects of the targets. Information sources for these indicators range from existing biodiversity-related indices adapted to CMS by disaggregating a migratory species component, to one-off studies and to information compiled from the National Reports submitted by CMS Parties. Some targets include quantifiable elements that are more readily measurable, while others are multifaceted and far-reaching, and consequently it may not be feasible to measure all aspects of every target.

As the mid-point in the Strategic Plan period, 2019 represents an opportunity to review progress to date and identify priorities for action. This report provides a

summary of progress towards each target, synthesized from relevant information provided in Parties' National Reports to COP13 and from the analysis of a subset of other priority indicators. As such, it is a snapshot rather than a comprehensive overview of implementation and does not ascribe a category of progress to each target. It also serves to identify gaps in knowledge and data collection to inform priorities for action. Due to sometimes considerable time delays between collecting and publishing data, some of the progress information may not fully cover the period up to 2019; additionally, the need for continuous data to detect trends may mean that such trends have to be set in a broader historical context to be meaningful (i.e. prior to the implementation period of the SPMS). Time-lags between implementation actions and the measurable biological and ecological outcomes expected by the SPMS also mean that progress towards many of the targets may not be fully revealed until after the end of the SPMS period.

Goal 1: Address the underlying causes of decline of migratory species by mainstreaming relevant conservation and sustainable use priorities across government and society

Target 1: People are aware of the multiple values of migratory species and their habitats and migration systems, and the steps they can take to conserve them and ensure the sustainability of any use.

In their National Reports, 50 Parties (63% of reporting Parties) reported positive results of awareness-raising activities, indicating notable progress towards the target. Data on actual levels of public awareness in terms of the specifics of this target, however, have not been

compiled or analysed. Further insights could be gained in future by conducting *ad hoc* surveys and/or by harnessing information on levels of engagement in and media coverage of events such as World Migratory Bird Day, social media activity and website analytics as suggested in the SPMS.

Target 2: Multiple values of migratory species and their habitats have been integrated into international, national and local development and poverty reduction strategies and planning processes, including on livelihoods, and are being incorporated into national accounting, as appropriate, and reporting systems.

In their National Reports, 32 Parties (41% of reporting Parties) reported having strategies, plans and/or processes in other sectors that made at least some reference to migratory species. A few Parties indicated that migratory species were mentioned in national reporting processes, including reports to other Conventions. Parties did not, however, provide many specifics on the elements of this target that refer to poverty, livelihoods or national accounting.

An understanding of the extent to which the values of migratory species and their habitats are integrated into strategies, planning processes and reporting systems is also lacking. It was suggested in the SPMS that a study reviewing the extent of integration of migratory species in selected types of strategies and processes (e.g. Sustainable Development plans/strategies) may help to generate information on this aspect.



Target 3: National, regional and international governance arrangements and agreements affecting migratory species and their migration systems have improved significantly, making relevant policy, legislative and implementation processes more coherent, accountable, transparent, participatory, equitable and inclusive.

Twenty-six Parties (33% of reporting Parties), in their National Reports, indicated that existing governance arrangements already satisfied all the points in Target 3, and 21 others indicated that relevant improvements making either a major contribution or a good contribution towards achieving the target had been made in the reporting period. On this basis, notable progress is being made towards Target 3; however,

more improvements are needed in some countries. In relation to coherence, collaboration between CMS and other Convention focal points was reported by 62 Parties, and national-level mechanisms for liaison between different sectors or groups to address CMS implementation issues were reported by 38 Parties, providing a good basis for more coherent implementation processes.

Target 4: Incentives, including subsidies, harmful to migratory species, and/or their habitats are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation of migratory species and their habitats are developed and applied, consistent with engagements under the CMS and other relevant international and regional obligations and commitments.

According to their National Reports, over half of the reporting Parties (46 Parties; 58% of reporting Parties) have made some progress with developing or applying positive incentives for the conservation of migratory species. Fewer than a third (24 Parties; 30% of reporting Parties), however, reported being able to eliminate, phase out or reform harmful incentives, though a further 24 Parties indicated that harmful

incentives had never existed in their country. Across the National Reports, the concept of harmful incentives has been subject to some mixed interpretations. Further clarification, including providing more explicit examples, could help to ensure that all harmful incentives affecting migratory species are identified - and ultimately eliminated/phased out - in order to move more fully towards fulfilment of Target 4.

Goal 2: Reduce the direct pressures on migratory species and their habitats

Target 5: Governments, key sectors and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption, keeping the impacts of use of natural resources, including habitats, on migratory species well within safe ecological limits to promote the favourable conservation status of migratory species and maintain the quality, integrity, resilience, and ecological connectivity of their habitats and migration routes.

Forty-six Parties (58% reporting Parties) reported in their National Reports having implemented plans or taken other steps towards ensuring sustainable production and consumption. While it is challenging to measure the “outcome” aspects of this target, the Red List Index, which shows trends in extinction risk and can be disaggregated to show trends associated with utilization, can provide a useful proxy for understanding

the impacts of use on the conservation status of migratory species. A subset of the RLI (covering CMS-listed mammals and birds) showing trends driven only by utilization is declining, indicating that, overall, use of these CMS-listed species remains unsustainable (Box 1). Looking beyond CMS-listed species, this is also the case for migratory birds in general, the only group for which data are comprehensively available.

Box 1: The Red List Index showing trends in extinction risk driven only by utilization (see Box 3 for further details on the RLI). A subset of the RLI has been analysed to show trends driven only by utilization or its management, including hunting/trapping, logging and wood harvesting, for CMS-listed bird and mammal species. The Indices for both groups are declining, indicating that these CMS-listed species are at increasing risk of extinction (Figure 1). Overall, CMS-listed birds are more threatened than CMS-listed mammals (i.e. lower RLI values) (Figure 1). The trend driven by utilization is similar to the trend of the general RLI showing extinction risk for CMS-listed mammals. Historically, utilized CMS-listed birds appear to have been more threatened compared to CMS-listed birds in general (see Box 3).

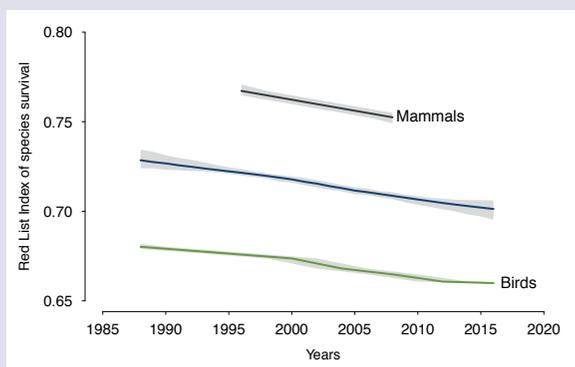


Figure 1. Red List Index of species survival for CMS-listed bird and mammal species, showing trends driven by utilization, including hunting/trapping, fisheries, logging and wood harvesting. The blue line shows the aggregated Red List Index across both groups. Grey shading shows confidence intervals. An index value of 1 equates to all species being categorized as 'Least Concern'; an index value of 0 equates to all species being categorized as 'Extinct'.

(Source: BirdLife International, 2019)

Target 6: Fisheries and hunting have no significant direct or indirect adverse impacts on migratory species, their habitats or their migration routes, and impacts of fisheries and hunting are within safe ecological limits.

According to Parties' National Reports, illegal hunting, which includes illegal fishing, was identified as one of the overall top three pressures with severe adverse impacts on migratory species (see Box 2). Furthermore, each of the pressures relating to fisheries and hunting that Parties were invited to report on was reported to be having an adverse impact in at least 40 countries. Amongst all pressures that Parties were invited to report on, direct killing and taking (11 Parties; 14% reporting Parties) and bycatch (6 Parties; 8% reporting Parties) were cited as two of the pressures with the most significant negative trends in the last triennium. On this basis, more efforts to minimize or mitigate the adverse impacts of fisheries and hunting are needed.

Currently, meaningful Red List Indices showing trends

driven by the effects of fisheries cannot be calculated for CMS-listed and other migratory species as these disaggregates contain too few species to be reliable. With work underway on Red List assessments of fish and reptiles, the data availability may improve to a point where this indicator will be possible to use in future.

The SPMS recommended that a composite indicator be developed to look at trends in implementation measures designed to minimize the impacts of fisheries and hunting on migratory species (e.g. bycatch mitigation, hunting close seasons). Further work would be needed to develop a consistent assessment method for this indicator and to determine the appropriate sources of information, which could include National Reports to CMS and its daughter agreements as well as data from FAO and others.

Target 7: Multiple anthropogenic pressures have been reduced to levels that are not detrimental to the conservation of migratory species or to the functioning, integrity, ecological connectivity and resilience of their habitats.

In their National Reports, Parties identified the prevalence and severity of various threats and pressures that are having an adverse impact on migratory species, with habitat loss and degradation being dominant among these (Box 2). Each of the 32 pressures that Parties were invited to report on was considered to be having adverse impacts in over 35 countries and severe adverse impacts in at least one country (Box 2). This indicates that further action is needed to reduce pressures to levels that are not detrimental. Information in the National Reports could be used to identify those pressures where action should be concentrated, and could indicate whether this might be mainly at national, regional or

global levels. Future cycles of national reporting will enable global-level trends to be identified.

Trends in specific threat types could also contribute to a composite indicator measuring progress towards this target, in particular the subsets of the Red List Index for CMS-listed species showing trends driven by utilization (Target 5) or by fisheries (Target 6). Analogous RLI measures showing trends driven by other threat categories in the Classification Schemes used in the IUCN Red List assessments, such as impacts of agriculture, pollution and climate change, could also add value if they can be reliably calculated.

Box 2: Threats and pressures. As part of their National Reports to COP13, Parties were asked to identify the prevalence and severity of 32 threats and pressures that might be having an adverse impact on migratory species. Each of the pressures was considered to be having severe adverse impacts in at least one country, and for each pressure at least 35 Parties considered it to be having an adverse impact in their country (Figure 2). The most widely-reported pressures were habitat loss/destruction (including deforestation), habitat degradation, and illegal hunting; these were also most frequently ranked as severe (Figure 2).

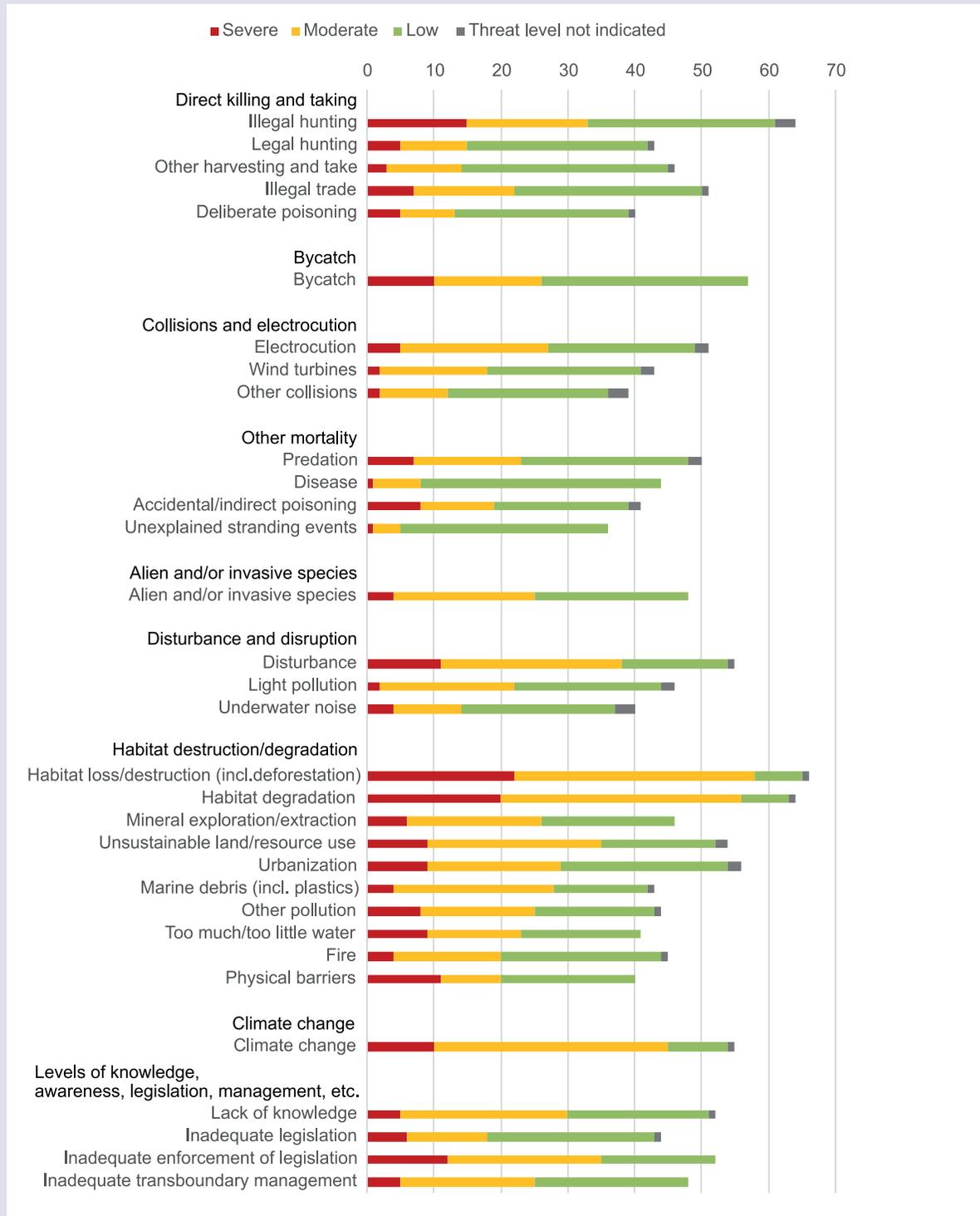


Figure 2. Number of Parties having submitted National Reports to COP13 that reported each pressure and its severity. If a Party listed more than one ranking for a given pressure (e.g. 'low to moderate'), only the most severe ranking was counted.

(Source: Analysis of CMS National Reports to COP 13, COP13/Doc.20.1)

Goal 3: Improve the conservation status of migratory species and the ecological connectivity and resilience of their habitats

Target 8: The conservation status of all migratory species, especially threatened species, has considerably improved throughout their range.

A snapshot of major conservation status changes for CMS-listed species as identified by Parties was provided in the National Reports. Parties reported improvements in some areas for some terrestrial and aquatic mammals, but notable declines for bats, birds and fish, a more mixed picture for reptiles, and no information for insects. Major changes of this kind (either positive or negative) were reported only by a minority of Parties and only for a subset of CMS-listed species.

Aspects of conservation status can be more consistently measured using global biodiversity indices. The Red List Index shows that CMS-listed birds and mammals have, on average, deteriorated in status over the period from 1988 to 2016, indicating that increasing numbers of CMS-listed species are at risk of extinction (Box 3). This is also the case for migratory birds as a whole

(the only group that has been comprehensively assessed and could be analysed). CMS-listed birds are more threatened overall than CMS-listed mammals (i.e. lower RLI values) (Box 3).

The Living Planet Index, which monitors abundance changes of vertebrate species over time, shows an overall average increase in CMS-listed species abundance of 8% between 1970 and 2015; reptiles, aquatic mammals and birds increased in abundance, while fish and terrestrial mammals have declined (Box 4). For populations of Appendix I species, the average trend is overall negative, with species declining in abundance by 23% between 1970 and 2015 (Box 4). A migratory bird disaggregation of the Wild Bird Index, which measures population trends, could provide a further perspective on the conservation status of migratory birds.

Box 3: The Red List Index. The Red List Index (RLI) measures change in aggregate survival probability across groups of species, based on changes in the number of species in each category of extinction risk in The IUCN Red List of Threatened Species that reflect genuine changes in status and are not simply a result of improved knowledge or a revised taxonomy. The index value ranges from 1 (all species are categorized as ‘Least Concern’) to 0 (all species are categorized as ‘Extinct’). A lower RLI value therefore indicates greater extinction risk, while a steeper RLI slope indicates a faster move towards extinction.

At present, only data for birds and mammals are sufficiently comprehensive for an assessment. Trends can be disaggregated by taxonomic group, region or specific threat types; however, certain disaggregates result in too few species to calculate meaningful Indices. As a consequence, it was only possible to compile the RLI for CMS-listed birds and mammals, and global and regional migratory birds. Differences in definitions of ‘migratory’ between CMS and IUCN are important to bear in mind when looking at disaggregates more broadly.

The Red List Index for CMS-listed species shows increasing risk of extinction for both mammals and birds (Figure 3). CMS-listed birds are more threatened overall than CMS-listed mammals (i.e. lower RLI values) (Figure 3).

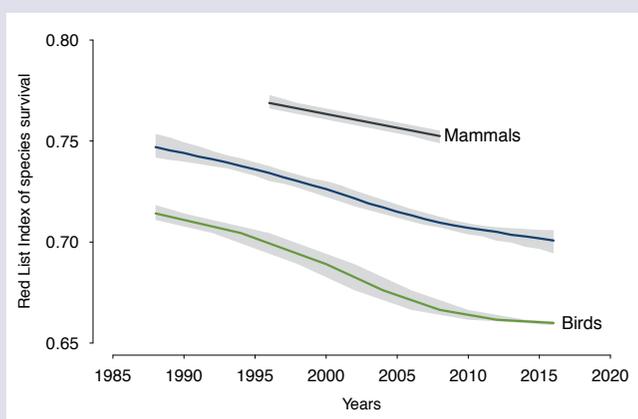


Figure 3. Red List Index of species survival for CMS-listed bird and mammal species, globally. The blue line shows the aggregated Red List Index across both groups. Grey shading shows confidence intervals. An index value of 1 equates to all species being categorized as ‘Least Concern’ an index value of 0 equates to all species being categorized as ‘Extinct’.

For more information on the Red List Index or the full methodology, visit <https://www.iucnredlist.org/assessment/red-list-index> <https://unstats.un.org/sdgs/metadata/files/Metadata-15-05-01.pdf>

(Source: BirdLife International, 2019)

Box 4: The Living Planet Index. The Living Planet Index (LPI) monitors the average change in abundance of vertebrate species over time; average change in population is calculated compared with the previous year, starting with an initial value of 1 in 1970.

A subset of the LPI data showing trends for CMS-listed species shows an overall average increase in abundance of 8% between 1970 and 2015 (Figure 4). Some groups have gained in abundance – reptiles (290%), aquatic mammals (103%; considered most likely a result of intermittent monitoring data) and birds (19%), while others show a marked decline – fish (-92%) and terrestrial mammals (-11%) (Figure 5). The average trend for Appendix I-listed species is overall negative, with species declining in abundance by 23% on average between 1970 and 2015 (Figure 4).

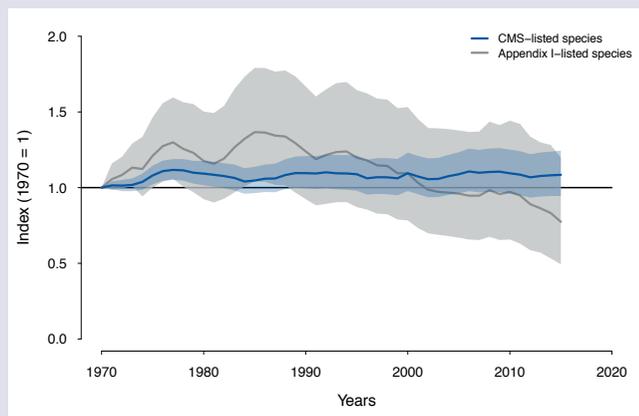


Figure 4: Average change in abundance, between 1970 and 2015, of CMS-listed species monitored globally (blue line; based on 3369 populations of 583 species of fishes, birds, mammals and reptiles) and CMS Appendix I-listed species of birds, mammals and reptiles (grey line; based on 745 populations of 100 species of birds, mammals and reptiles). The shaded areas represent the statistical uncertainty surrounding the trend.

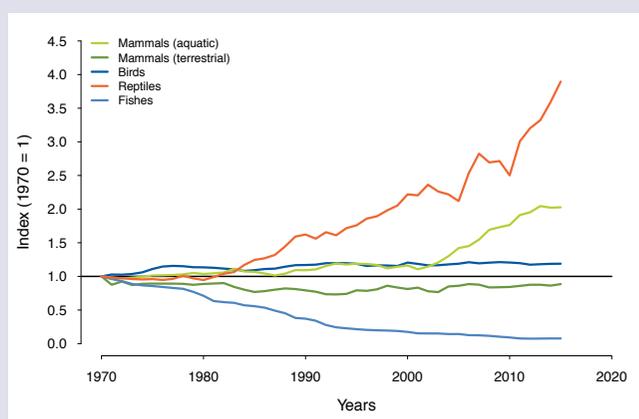


Figure 5: Average change in abundance, between 1970 and 2015, of CMS-listed species, by taxonomic group. Trends are for 2531 monitored populations of 465 bird species, 263 populations of 45 terrestrial mammal species, 195 populations of 37 aquatic mammals, 148 populations of 26 fish species, and 232 populations of 10 reptile species.

Taxonomic coverage of the LPI dataset is not complete, but can be considered to be good, with around 50% of CMS-listed species represented in the overall Index. Representation for different taxonomic groups ranges from 48% in fish to 62% in aquatic mammals and 100% in reptiles. For Appendix I species, over half of species are represented overall, but coverage is poor for fish. To achieve at least 50% representation in all data cuts, more information is needed on birds and fish, and especially those fish listed in Appendix I.

For more information on the Living Planet Index visit www.livingplanetindex.org/home/index

(Source: Zoological Society of London (ZSL), 2019)

Target 9: International and regional action and cooperation between States for the conservation and effective management of migratory species fully reflects a migration systems approach, in which all States sharing responsibility for the species concerned engage in such actions in a concerted way.

According to their National Reports, 24 Parties (30% of reporting Parties) participated in the implementation of “concerted actions” as defined by the CMS COP, and just 10% of the taxa currently identified for such actions by the COP are known to be receiving attention in that context. A range of other positive cooperative activities were reported by 23 Parties (29% of reporting

Parties). These figures are low compared to what might be expected given the centrality of Target 9 to the purposes of CMS. A targeted study, as suggested in the SPMS, may be beneficial to evaluate levels of cooperation further, and to determine the extent to which a migration systems approach is being applied.

Target 10: All critical habitats and sites for migratory species are identified and included in area-based conservation measures so as to maintain their quality, integrity, resilience and functioning in accordance with the implementation of Aichi Target 11, supported where necessary by environmentally sensitive land-use planning and landscape management on a wider scale.

In their National Reports, most Parties (70 Parties; 88% of reporting Parties) reported having done some inventorying of critical habitats and sites for migratory species, indicating progress on the “identifying” aspect of this target. However, only one-fifth of those who submitted reports (17 Parties; 21% of reporting Parties) indicated that this process was complete. Assessing the proportion of threatened and/or congregatory migratory species for which Key Biodiversity Areas (KBAs) have been identified throughout their range could provide another way of measuring progress towards identifying all critical habitats and sites for migratory species.

The extent to which critical habitats and sites for migratory species are included in area-based conservation measures can most readily be assessed by comparing the coverage of KBAs identified due to their

importance for migratory species with that of protected areas. The proportion of KBAs of importance for migratory species that are covered by formal protected areas has grown substantially over recent decades, with the mean percentage of each of these KBAs formally protected reaching 49% in 2018 (Box 5). Protected area coverage of KBAs identified for CMS-listed species also averages 49% globally (Box 5).

Assessments of management effectiveness in respect of similarly relevant protected areas were reported to have been undertaken by 23 Parties (29% of reporting Parties). A further 23 Parties reported that these assessments were either in development or had been undertaken for some areas. Closer examination of individual assessments may provide more specific insights into migratory species outcomes.

Box 5: Key Biodiversity Areas and protected area coverage. Many Key Biodiversity Areas (KBAs), which encompass Important Bird and Biodiversity Areas and Alliance for Zero Extinction sites, have been identified owing to their importance for congregations of migratory species, or for populations of threatened migratory species. The degree to which KBAs are covered by protected areas is calculated based on overlaps between digital boundaries of protected areas and of KBAs identified either for migratory species or for CMS-listed species.

The coverage of this subset of sites by formal protected areas has grown substantially over time, with the mean percentage of each KBA covered by protected areas reaching 49% by 2018 (Figure 6). Coverage varies by region, being lowest in Asia (31%) and South/Central America and the Caribbean (39%), and highest in Africa (51%) and Europe (69%); protected area coverage of KBAs identified for CMS-listed species shows a similar regional pattern and also averages 49% globally (Figure 6). It is interesting to note that these trend lines are concurrent and this may indicate that CMS-listed species are not necessarily being prioritized in the formal designation of protected areas.

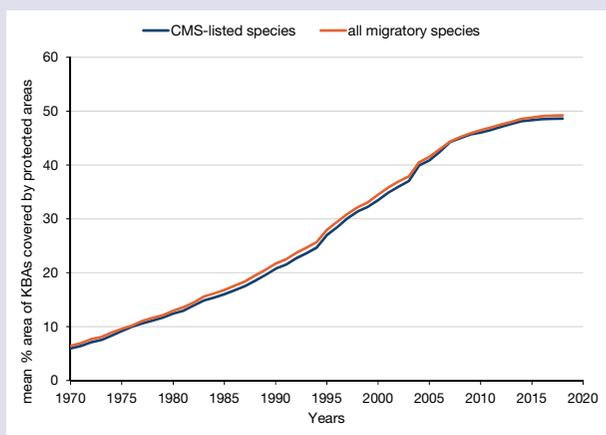


Figure 6. Trends in protected area coverage of each Key Biodiversity Area identified for migratory (red) and CMS-listed (blue) bird and mammal species, globally, 1970-2018.

Note, however, that the ‘all migratory species’ subset for which KBAs have been identified follows the IUCN Red List definition of ‘full migrants’, and consequently, as with the Red List Index, may include more or fewer species than CMS would classify as migratory.

For more information on Key Biodiversity Areas, Protected Areas or the full methodology, visit <http://www.keybiodiversityareas.org/> <https://www.protectedplanet.net/> <https://unstats.un.org/sdgs/metadata/files/Metadata-15-01-02.pdf>

(Source: BirdLife International, 2019)

Goal 4: Enhance the benefits to all from the favourable conservation status of migratory species

Target 11: Migratory species and their habitats which provide important ecosystem services are maintained at or restored to favourable conservation status, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

The first step towards the ultimate outcome expressed by this target requires identification of the migratory species and their habitats that provide important ecosystem services. In their National Reports, Parties were asked to report on whether they had done any assessment of ecosystem services associated with migratory species and 30 Parties (38% of reporting

Parties) indicated that they had taken this initial step. The SPMS suggested that a series of case studies involving ecosystem services would be best placed to illuminate the relationships between species status and ecosystem service delivery and provide a basis for assessing the outcomes envisaged by this target.

Target 12: The genetic diversity of wild populations of migratory species is safeguarded, and strategies have been developed and implemented for minimizing genetic erosion.

Thirty-four Parties (43% of reporting Parties) indicated in their National Reports that relevant strategies or other measures had been implemented or were being developed to minimize genetic erosion of biodiversity.

While this indicates that some progress is being made, more effort from the remaining Parties is needed. In general, the extent to which genetic diversity is being safeguarded remains a challenge to assess.

Goal 5: Enhance implementation through participatory planning, knowledge management and capacity building

Target 13: Priorities for effective conservation and management of migratory species, their habitats and migration systems have been included in the development and implementation of national biodiversity strategies and action plans, with reference where relevant to CMS agreements and action plans and their implementation bodies.

Fewer than one-fifth of reporting Parties (14 Parties; 18% of reporting Parties) indicated in their National Reports that migratory species concerns are explicitly referred to in their NBSAPs, suggesting low levels of progress towards this target. Examples where such references do occur include references to action plans for relevant species and steps to address obstacles to migration. In order to satisfy the target, migratory species concerns must also be included in the

implementation of the NBSAPs, and while a number of Parties indicated that implementation was proceeding, few gave details of aspects relating specifically to migratory species. A more complete picture of how well migratory species concerns have been integrated into the development, and particularly the implementation, of NBSAPs, could potentially be gleaned through examination of the national mechanisms for monitoring implementation of NBSAPs.

Target 14: The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of migratory species, their habitats and migration systems, and their customary sustainable use of biological resources, are respected, subject to national legislation and relevant international obligations, with the full and effective participation of indigenous and local communities, thereby contributing to the favourable conservation status of migratory species and the ecological connectivity and resilience of their habitats.

In their National Reports, only five Parties (6% of reporting Parties) indicated that the target had been substantially achieved at the national level, but a majority reported that they were taking action to foster consideration of these perspectives (44 Parties; 56% of reporting Parties) and/or to promote the requisite participation (51 Parties; 65% of reporting Parties).

A number of Parties considered that these issues were not applicable to them, which suggests a need to clarify definitions. Although the extent to which the target is relevant will vary between countries, all countries can in principle contribute towards the achievement of the target, including in the context of international cooperation.

Target 15: The science base, information, training, awareness, understanding and technologies relating to migratory species, their habitats and migration systems, their value, functioning, status and trends, and the consequences of their loss, are improved, widely shared and transferred, and effectively applied.

Actions taken in relation to this target, particularly on promotion of public awareness (as also reflected under Target 1), education campaigns and information exchange, were reported by the vast majority of Parties in their National Reports (77 Parties; 97% of reporting Parties), indicating positive steps towards fulfilment of this target. The exchange of information and knowledge, research and innovation, and technical assistance, supported by funding, were identified as the

main areas where most of the reporting Parties (71 Parties; 90% of reporting Parties) required assistance to improve capacity further in order to implement fully their obligations under CMS. Further assessment of progress relating to the “science base” dimension of this target could be achieved by monitoring trends in publication of papers on migratory species conservation, along with download statistics, as suggested in the SPMS.

Target 16: The mobilization of adequate resources from all sources to implement the Strategic Plan for Migratory Species effectively has increased substantially.

In their National Reports, an overall increase in resources mobilized compared with the previous triennium was reported by only 17 Parties (22% of reporting Parties) mobilizing resources internally or as donor countries, and by only 15 Parties (19% of reporting Parties) receiving resources, indicating

that insufficient progress is being made in relation to this target. Comments in other sections of the National Reports have emphasized the extent to which insufficient resources are hampering implementation efforts.

Key findings, data gaps and recommendations

Positive progress has been made towards the achievement of some SPMS targets, especially those relating to awareness raising, improved governance arrangements and area-based conservation measures (**Targets 1, 3 and 10, respectively**). Despite notable progress in these areas, however, progress towards the achievement of some other targets is lacking, which will ultimately hinder overall progress towards the SPMS goals. In particular, the reduction or mitigation of the impacts of various threats and pressures on migratory species, including unsustainable use (**Targets 5, 6 and 7**), should be considered **priority areas for intensified efforts**.

Favourable conservation status represents the ultimate objective of many of the Targets in the SPMS and the indicators assessing progress towards the achievement of Target 8 - *the conservation status of all migratory species, especially threatened species, has considerably improved throughout their range* - reveal a varied picture depending on the taxonomic group assessed and the method of assessment. In future, further scrutiny of these results, assessment of an additional indicator (a disaggregation of the Wild Bird Index) and potentially other approaches (e.g. a systematic review of the IUCN Red List information for various taxonomic/geographic subsets) could be considered to provide further insights in relation to aspects of conservation status.

This review has highlighted several limitations to the ability to measure progress to date. In some cases, these limitations are inherent in the construction of the SPMS targets themselves; for example, certain targets

embody expressions of ultimate outcomes (such as habitat resilience or coherent governance) which can be particularly challenging to measure. In other cases, **data availability and indicator gaps** hinder assessment of progress (for example, Targets 6, 9 and 11). It is also important to note that there can be considerable time-lags between cause and effect, and these need to be taken into account when considering whether implementation activities are having the desired impact, particularly as some of the outcomes expected by the SPMS assume theories of change involving long timeframes.

Some of the indicators identified in the Strategic Plan require further development before they can become operable, and work on these should advance during the coming triennium. This is particularly relevant for the composite indicators recommended in the SPMS for assessing progress towards Targets 6 and 7.

Although techniques for disaggregating migratory species information in some of the primary global datasets such as the IUCN Red List, the Living Planet Index and data on Key Biodiversity Areas have advanced significantly in recent years, there is scope for continued improvements; currently some disaggregations (e.g. for specific threats and/or taxonomic groups) still contain too little data to generate meaningful indices. As a result, for instance, RLIs could only be produced for CMS-listed species and not ‘all migratory species’, and one of the indicators recommended for Target 6 (RLI showing trends driven

by the effects of fisheries) could not be produced for this report due to a lack of data. Ongoing work in relation to improving the underlying data for reptiles and fish might enable further assessments in future. Parties may wish to consider identifying which data gaps are the highest priorities to be filled.

A number of the indicators suggested in the SPMS are defined as *ad hoc* case studies or single assessment studies, but these have not yet been undertaken for this purpose. Options for progressing these should be explored in the coming triennium. Parties' National

Reports have indicated places where some national studies have been completed on certain issues, and those could provide a starting point for scoping wider indicator studies on the issues concerned.

Overall, while there has been notable progress, it is clear that more action individually and cooperatively amongst CMS Parties and beyond, as well as a focus on filling priority data gaps, is needed to fulfil the overall ambitions of the SPMS. Adequate mobilization of resources and capacity-building will be essential for this.

The UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) is a global Centre of excellence on biodiversity. The Centre operates as a collaboration between the UN Environment Programme and the UK-registered charity WCMC. Together we are confronting the global crisis facing nature.

This publication may be reproduced for educational or non-profit purposes without special permission, provided acknowledgement to the source is made. Reuse of any figures is subject to permission from the original rights holders. No use of this publication may be made for resale or any other commercial purpose without permission in writing from the UN Environment Programme. Applications for permission, with a statement of purpose and extent of reproduction, should be sent to the Director, UNEP-WCMC, 219 Huntingdon Road, Cambridge, CB3 0DL, UK.

The contents of this report do not necessarily reflect the views or policies of the UN Environment Programme, contributory organisations or editors. The designations employed and the presentations of material in this report do not imply the expression of any opinion whatsoever on the part of the UN Environment Programme or contributory organisations, editors or publishers concerning the legal status of any country, territory, city area or its authorities, or concerning the delimitation of its frontiers or boundaries or the designation of its name, frontiers or boundaries. The mention of a commercial entity or product in this publication does not imply endorsement by the UN Environment Programme.

