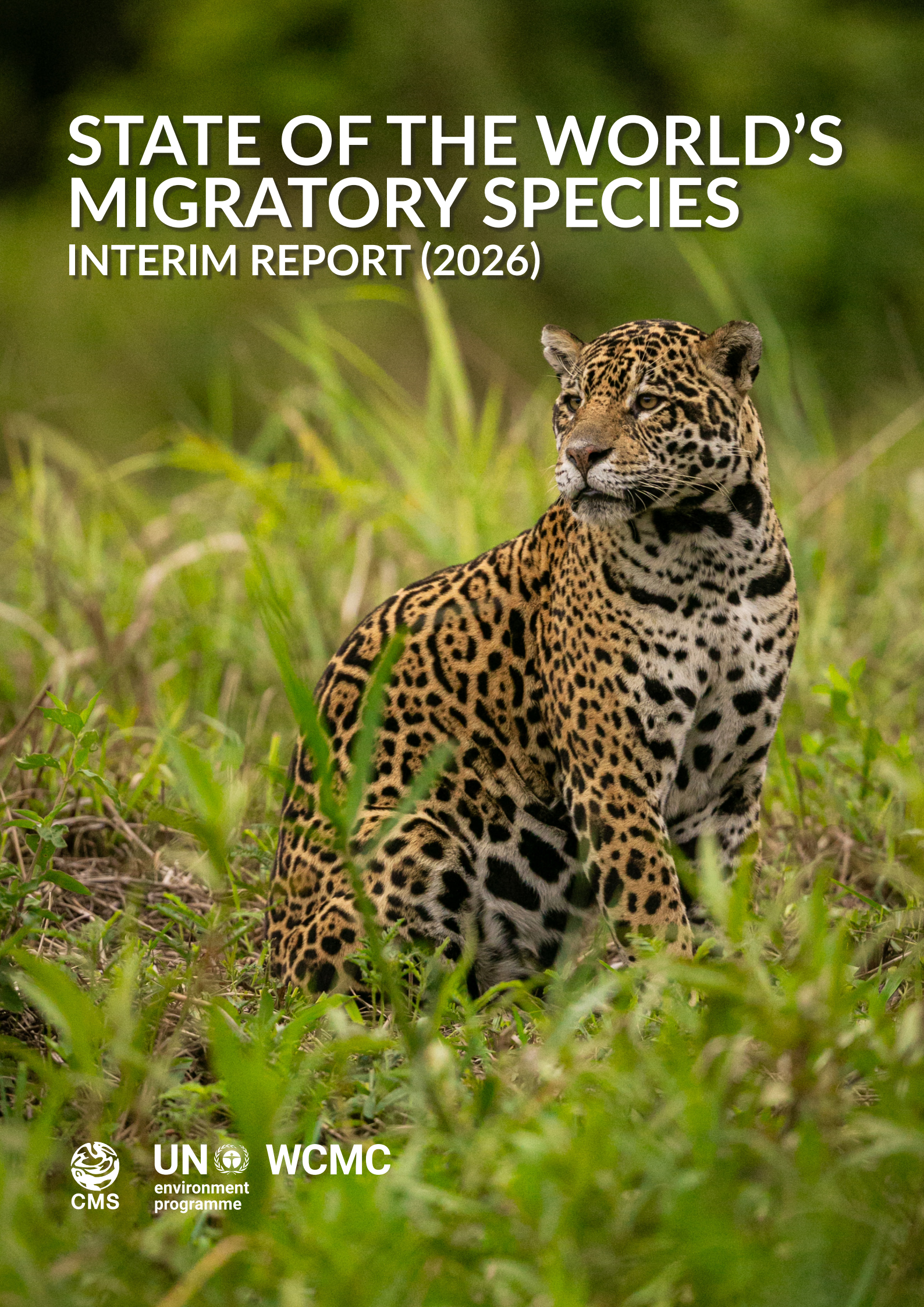
# STATE OF THE WORLD'S MIGRATORY SPECIES

## INTERIM REPORT (2026)



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# State of the World's Migratory Species: Interim Report (2026)

**Prepared for:** The Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

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**African Penguins (*Spheniscus demersus*) moved to a more threatened IUCN Red List category in 2024. They are now considered to be Critically Endangered.**

# Executive Summary

**The first *State of the World's Migratory Species* was launched at the 14th meeting of the Conference of the Parties of the Convention on the Conservation of Migratory Species of Wild Animals (CMS COP14), in February 2024. The report revealed that the extinction risk of CMS-listed species is rising, and that the same trend is evident for migratory species as a whole (including those not listed in the CMS Appendices). This concerning trajectory is the result of intensifying pressure from human activities, with many migratory species exposed to a combination of interacting threats occurring in multiple different locations on their migratory routes.**

This interim report, produced for CMS COP15 in response to Decision 14.24 d), provides an update on major developments in the conservation status of CMS-listed species since COP14. It includes an analysis of updates to the IUCN Red List of Threatened Species™ and summarizes insights on population trends and distribution changes from recently published scientific literature. It also provides an update on the extent to which important habitats for CMS-listed species have been identified and protected. Finally, it shines a spotlight on several initiatives that are mapping the routes and pathways used by migratory species.

Updated IUCN Red List assessments have been published for approximately one third of all CMS-listed species since this dataset was analyzed in the first *State of the World's Migratory Species*. Following these re-assessments, released as part of IUCN Red List version 2025-1, almost one in four CMS-listed species (24%) are now globally threatened, representing a marginal (2%) increase to the percentage (22%) reported at COP14. Of the species that were listed in the CMS Appendices prior to COP14, 34 have shifted to a new IUCN Red List category over the same period. Twenty-six of these species have moved to a more threatened IUCN Red List category, including 18 shorebirds. The majority of these shorebirds are confirmed as having undergone deteriorations in their conservation status that can be attributed to growing threats, as opposed to changes resulting from improvements in data, indicating that the species is more threatened than originally determined. At the same time, seven CMS-listed species have shifted to a less threatened IUCN Red List category, reflecting some conservation successes.

According to data from IUCN Red List assessments, the proportion of CMS-listed species with a decreasing population trend now stands at 49%, up from the 44% reported at COP14. This change may reflect improved information on population trends, rather than sudden declines in populations since COP14, but the situation is still concerning. Recently published scientific papers and reports also highlight decreasing population trends for migratory shorebirds, raptors in the African-Eurasian flyway, freshwater fish, and sharks and rays. Many of these insights reaffirm alarming trends that were already known at COP14, including the worsening conservation status of CMS-listed fish. These negative trends contrast with a more positive picture overall for many (but not all) marine turtle populations globally.

Since COP14, progress has been made identifying sites or broader areas that include important habitats for CMS-listed species. To date, of the 16,589 Key Biodiversity Areas (KBAs) recognized globally, 9,372 KBAs (56%) have been identified as being important for CMS-listed species. A growing number of Important Marine Mammal Areas (IMMAs) and Important Shark and Ray Areas (ISRAs) – together totalling over 1,000 distinct areas globally – have also been identified, including many important areas for CMS-listed aquatic mammals and sharks/rays. While important areas have now been identified for a broader range of CMS-listed species, more work is needed to comprehensively identify the networks of sites that individual species rely on throughout their life and annual cycles.

Significant progress has also been made since COP14 in efforts to synthesize spatial information on migratory routes, pathways and connections, by a range of different groups and initiatives. These efforts are illustrated in this report through a spotlight section highlighting the Global Initiative on Ungulate Migration (GIUM), the Migratory Connectivity in the Ocean (MiCO) system and BirdLife International's work to identify and map six major marine flyways. Up-to-date mapping can accelerate the identification of comprehensive site networks for migratory species and help to pinpoint the human-made obstacles and anthropogenic activities that threaten to disrupt connectivity and fragment migratory routes.

Despite these advances, detailed scientific information on the most important habitats and migratory pathways is still lacking for many CMS-listed species, and substantial regional knowledge gaps remain. Gaps also exist in efforts to safeguard important habitats; crucially, many of the important areas for CMS-listed species that have been identified to date lack adequate levels of protection. On average, just over half (52.6%) of the area of each KBA identified as being important for CMS-listed species is now covered by protected and conserved areas. These results suggest that there are potentially substantial gaps in the protection of sites that are important for the global persistence of CMS-listed species; the identification of these unprotected sites also provides a useful basis for countries to plan, prioritize and make decisions on the designation of new protected and conserved areas.

Based on the findings of this report, more action will be needed to achieve Target 2.2 of the *Samarkand Strategic Plan for Migratory Species 2024–2032*, which calls for the protection, effective conservation, management and restoration of all important habitats for CMS-listed species by 2032. Accelerating efforts to identify networks of important sites, and to map the migratory pathways that link them, will be pivotal in ensuring that area-based conservation is targeted to the places where it is needed most. Ultimately, action to restore, connect and protect important habitats, and reduce the pressures facing migratory species from threats such as overexploitation, climate change and pollution, is still urgently required to secure their future. The first *State of the World's Migratory Species* included a set of recommendations for priority actions, which provided the foundation for the Samarkand Strategic Plan for Migratory Species. Such recommended actions are still valid and, are more urgent than ever.



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**The IUCN Red List status of the Saiga Antelope (*Saiga tatarica*) improved to Near Threatened in 2023.**

# Introduction

The first *State of the World's Migratory Species* was launched at CMS COP14 in Samarkand, Uzbekistan, in March 2024. The report provided a comprehensive overview of the conservation status of migratory species and the pressures that they face. It also highlighted examples of actions being taken to conserve these species and their habitats.

One of the key messages from the *State of the World's Migratory Species* is that the conservation status of migratory species is deteriorating overall. Just over one in five CMS-listed species were found to be threatened with extinction, with 44% undergoing population declines. The report concluded that these trends are being driven by intense levels of anthropogenic pressure, with the main pressures across CMS-listed species as a whole identified as habitat loss, degradation and fragmentation, and overexploitation. Other key threats include pollution, climate change and invasive species.

While the main drivers of increasing extinction risk across CMS-listed species are unlikely to have changed substantially since COP14, new information relevant to the conservation status and trends in many CMS-listed and migratory species has been published during the interim period. Recognizing the need for regular reviews of information on the status of and threats to migratory species, the CMS Parties adopted Resolution 14.4 to help inform conservation actions. Through this Resolution, the Parties decided that the *State of the World's Migratory Species* should be produced for alternate meetings of the Conference of the Parties, with the next report to be developed for COP16. At interim meetings, starting at COP15, Parties agreed – via Decision 14.24 d) – that the Secretariat should "*during the intersessional period prior to COP15, identify any major developments regarding the conservation status of migratory species, including emerging trends or threats, and prepare a summary for the 8th meeting of the Sessional Committee and for the attention of COP15*".

This short interim report, produced for CMS COP15, provides an update on recently reported changes to the conservation status, population trends and distributions of CMS-listed species (**Sections 1** and **2**). It also summarizes recent efforts to identify and protect important habitats for migratory species (**Section 3**), as well as recent efforts to map migratory pathways (**Section 4**). Guidance on the content of the interim report for COP15 was provided by an Intersessional Working Group on the *State of the World's Migratory Species* . As part of their work, the group reviewed and provided feedback on the approach proposed for this report by UNEP-WCMC and provided expert review of the report as it was developed.




**The globally Endangered Tucuxi** (*Sotalia fluviatilis*) **faces a variety of threats, including incidental entanglement in fishing gear, deliberate taking and the loss of habitat connectivity in the Amazon river basin due to human activities such as dam construction.**



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**The Curlew Sandiper (*Calidris ferruginea*) was re-categorised as globally Vulnerable by the IUCN Red List in 2024, following population declines.**

# I. Changes in the conservation status of CMS-listed species

The first *State of the World's Migratory Species* provided an overview of the conservation status of CMS-listed species, including an analysis of data from the IUCN Red List of Threatened Species™ that were available at the time of writing. The IUCN Red List assigns species to broad categories of extinction risk, based on a standardized set of scientifically rigorous criteria.

Since the previous analysis, which used version 2022-2 of the IUCN Red List, 386 of the 1200 CMS-listed species[a] have been re-assessed, excluding species that were listed at COP14. A closer look at the changes that have occurred within this group of re-assessed species can provide valuable insights on changes in conservation status. As global IUCN Red List assessments were used as the source of information for the majority (97%) of CMS-listed species, the IUCN Red List categories presented in this analysis mostly reflect global extinction risk[b].




**The CMS Appendix I-listed Great Bustard** (*Otis tarda*)**, categorized as Vulnerable in 2017, was re-classified as Endangered in 2023. Great Bustards face a range of pressures, including the loss and fragmentation of habitat (caused by agricultural intensification and infrastructure development), illegal taking and disturbance.[1]**

[a] Consistent with the first *State of the World's Migratory Species*, CMS-listed species where the parent species is also CMS-listed species were excluded from the analysis, to avoid double counting (five CMS-listed subspecies were excluded in this way: *Calidris canutus rufa, Gypaetus barbatus meridionalis, Lynx lynx balcanicus, Tursiops truncatus gephyreus* and *Tursiops truncatus ponticus*).

[b] Data from subspecies, subpopulation and regional assessments were used for taxa where only a subspecies or population of a species is listed in the CMS Appendices, where a more recent species-level assessment was available, excluding any assessments labelled as 'needs updating'. Non-global assessments were used for thirty-seven species in total, including for twenty-nine bat species for which the CMS listing applies to European populations only. Relevant regional assessments for many of these species only became available after 2022.

# Changes in the IUCN Red List category of CMS-listed species

Thirty-four (9%) of the 386 re-assessed CMS-listed species have been re-classified to a different IUCN Red List category since 2022. Twenty-six of these species have shifted to a more threatened category, while seven species have moved to a less threatened category (see **Appendix Table 1** for further details)[c]. The total number of globally threatened[d] CMS-listed species now stands at 284, representing 24% of all CMS-listed species (**Figure 1.1a**), up slightly from the 22% reported in the first *State of the World's Migratory Species*[e].

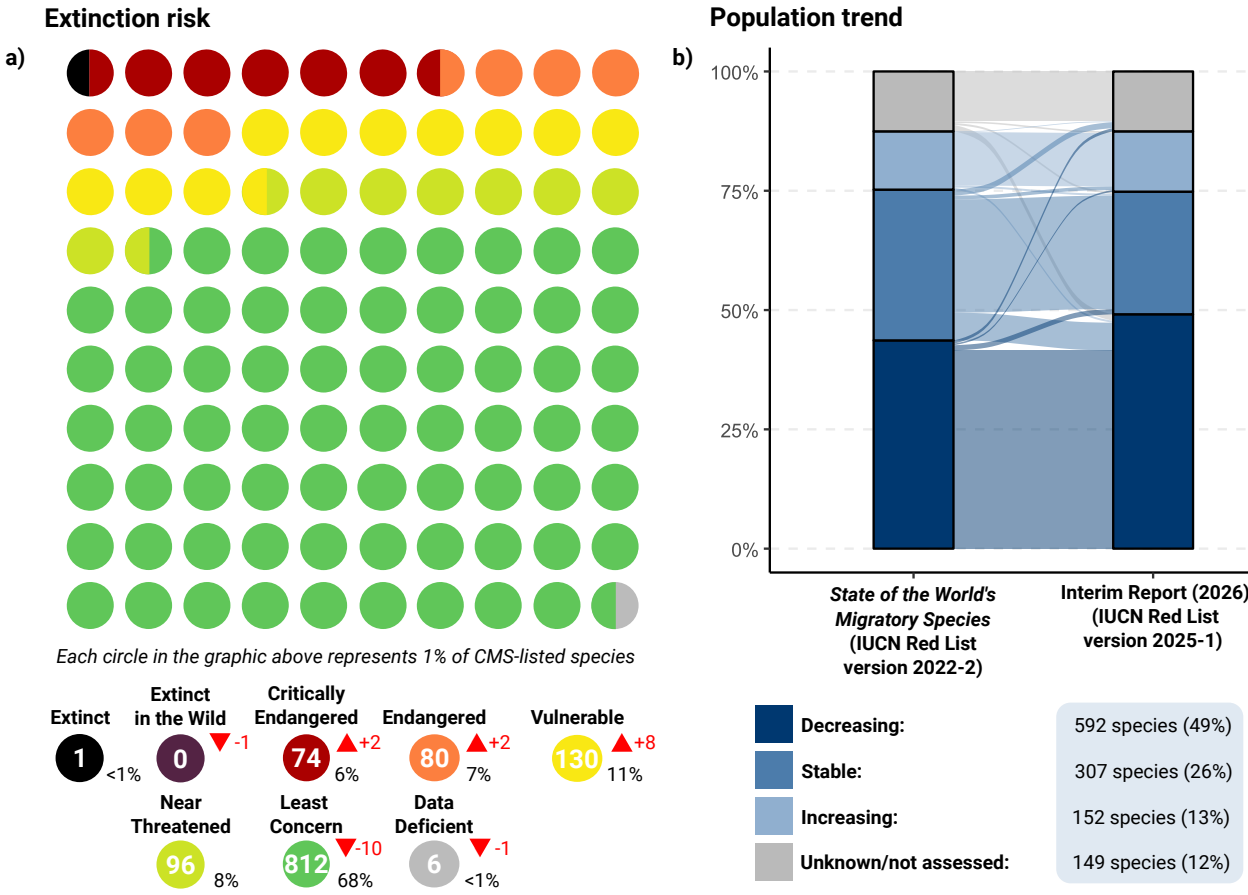



***Figure 1.1:*** ***a) Proportion and number of CMS-listed species in each IUCN Red List category.*** *In the main graphic,* ***each circle represents 1%*** *of the 1,200 CMS-listed species. The* ***key below*** *shows the total number of CMS-listed species that are currently in each category. The red numbers and arrows show the* ***net change*** *between the State of the World's Migratory Species and this report*. Net changes exclude species that were listed at COP14, and species listed at the population level for which relevant regional-level assessments have become available since the State of the World's Migratory Species. Net changes may reflect both deteriorations/improvements in conservation status due to growing/reduced threats, or changes in status due to improvements in knowledge.* ***b) Change in the population trends of individual CMS-listed species between the State of the World's Migratory Species and this report*.*** *The key shows the total number of CMS-listed species in each population trend category; taxa that were added to the CMS Appendices at COP14 are excluded from the chart.*

**The State of the World's Migratory Species used data from IUCN Red List assessments published up to 2022 (IUCN Red List version 2022-2); this report uses the latest IUCN Red List data (version 2025-1, released March 2025) that was available at the time of writing (September 2025). One CMS-listed species,* Gazella erlangeri*, has not been assessed by the IUCN Red List.*

[c] One species (*Charadrius dealbatus*, White-faced Plover) moved from Data Deficient to Least Concern.

[d] Globally threatened species are those that have been categorized as Critically Endangered, Endangered or Vulnerable.

[e] Similar to the approach taken in the first *State of the World's Migratory Species*, the number of bird species included under higher-level listings was based on a disaggregation following the CMS standard taxonomic reference. Only those birds assessed by the CMS COP-appointed co-Councillor for Birds as meeting the CMS movement criteria regardless of conservation status were included.

## Species that have moved to a more threatened category

Nineteen (73%) of the 26 species that have recently moved to a more threatened category are now categorized as Critically Endangered, Endangered or Vulnerable (see **Appendix Table 1**). Of these 19 globally threatened species, 12 were previously categorized as Least Concern or Near Threatened in the preceding assessment. A further seven species were previously categorized as globally threatened but have shifted to an even more threatened category: four of these species are now Endangered and three are now Critically Endangered.

Eighteen (69%) of the 26 CMS-listed species that moved to a more threatened category are migratory shorebirds, of which nine are now assessed as Vulnerable. At least 14 of these species have been confirmed as undergoing a deterioration in their global conservation status since 1988 that can be attributed to increased threats, rather than improvements in information[2].




**Like several other CMS-listed shorebirds, the CMS Appendix I-listed Buff-breasted Sandpiper (*Calidris subruficollis*) has recently been re-categorized from Near Threatened to Vulnerable, following the publication of an updated IUCN Red List assessment by BirdLife International for this species in 2024. This species undertakes a 30,000 km round-trip migration from its Arctic breeding grounds to non-breeding areas in southern South America but faces an uncertain future due to habitat loss and climate change[3].**

## Species that have moved to a less threatened category

Seven CMS-listed species have an improved conservation status since 2022. These include four bird species that have moved from Near Threatened to Least Concern (see **Appendix Table 1**), as well as the following examples of conservation successes:

- Following a successful reintroduction project in Chad, the Scimitar-horned Oryx (*Oryx dammah*) has been re-categorized from Extinct in the Wild to Endangered. The reintroduction has led to the establishment of a viable wild population, which numbered approximately 575 individuals in 2022[4].
- Recent population growth and range expansion has led to the Mediterranean Monk Seal (*Monachus monachus*) being re-categorized from Endangered to Vulnerable[5]. However, the global population still remains small, at under 1,000 individuals, and is still subject to pressures including the loss of optimal pupping and foraging habitat and negative interactions with fisheries[6].
- Saiga Antelope (*Saiga tatarica*) populations have rebounded spectacularly in parts of their range after disease outbreaks during the 2010s, moving the species from globally Endangered to Near Threatened. This recovery reflects intensified conservation efforts in Kazakhstan, including expanded anti-poaching initiatives, the protection of key habitats and engagement with local communities[7]. Saiga remain threatened in some areas and Range States, and are absent from other parts of their former range; the long-term recovery of the species depends on sustained conservation measures[8].



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**Scimitar-horned Oryx** (*Oryx dammah*) **being released as part of a successful reintroduction project in Chad in 2016. The species was categorized as Extinct in the Wild by the IUCN Red List in 2000 but has recently been re-categorized to Endangered following successful reintroduction efforts.**

# Changes in population trends

Updates to the IUCN Red List have also resulted in changes to population trends of CMS-listed species. Excluding the ten entirely new species and subspecies that were added to the CMS Appendices at COP14[f], the overall proportion of CMS-listed species with an increasing or stable population trend has declined from 43% (520 species) to 38% (459 species) since the first *State of the World's Migratory Species*. This change has largely been driven by the 67 Appendix II birds that have been re-assigned from the "stable" to the "decreasing" category, as indicated by the transitions shown in **Figure 1.1b**. This indicates that many species that were previously considered to be stable are actually decreasing; importantly, the number of species considered to have an "unknown" trend has remained roughly constant (**Figure 1.1b**).

The growth in the number of species with decreasing populations is likely to reflect the integration of additional long-term trend data within IUCN Red List assessments rather than abrupt decreases during the time period since COP14. In terms of positive changes, one terrestrial mammal (the Saiga Antelope, *Saiga tatarica*) and fourteen birds that were previously classified as "decreasing" now are considered to have either "increasing" or "stable" population trends.

Viewed as a whole, these updated statistics present a concerning picture: the total number of CMS-listed species that have decreasing population trends now stands at 592, or **almost half (49%) of all CMS-listed species**, up from the 44% reported in the *State of the World's Migratory Species*.

[f] At COP14, fourteen proposals to amend the CMS Appendices were adopted.

# II. Spotlight on recently reported population changes

Since CMS COP14, several scientific papers, assessments and reports have been published that provide updated information on trends in population abundance and changes in the distribution of migratory species across the globe. This section presents a brief synthesis of key findings from selected papers and assessments published between late 2023[g] up until the time of writing (September 2025)[h]. The aim of this section is to provide updates on key global or regional trends in some CMS-listed and non-CMS migratory species rather than to present a systematic survey or analysis of all of the relevant literature and data.

## Population changes reported across multiple taxonomic groups

### *Impacts of avian influenza*

- Since 2021, H5N1 highly pathogenic avian influenza (HPAI) has been detected in an unusually broad host range of birds and mammals and caused substantial mortality in many populations across multiple continents[1,2]. Reported mass mortality events have affected a range of avian CMS-listed species, including Critically Endangered African Penguins (*Spheniscus demersus*), Vulnerable Humboldt Penguins (*Spheniscus humboldti*) and Near Threatened Peruvian Pelicans (*Pelecanus thagus*) in South America, Near Threatened Dalmatian Pelicans (*Pelecanus crispus*) in Europe, and Vulnerable Hooded (*Grus monacha*) and Red-crowned Cranes (*Grus japonensis*) in Asia[3-6]. Mass mortality events have also been recorded in CMS-listed aquatic mammals, such as the South American Sea Lion (*Otaria byronia*) and the South American Fur Seal (*Arctocephalus australis*)[3].
- Although the long-term impacts of HPAI are uncertain, these disease outbreaks have added to the pressures already faced by migratory species. The emergence of HPAI is especially concerning for long-lived migratory species that are sensitive to any increases in mortality[1].




**CMS-listed Peruvian Pelicans (*Pelecanus thagus*) are one of many migratory species that have recently been impacted by Highly Pathogenic Avian Influenza (HPAI).**

[g] Literature published after late 2023 was published too late for inclusion in the first *State of the World's Migratory Species*.

[h] Other recent literature has also been cited in order to provide additional context on the drivers of population change, where available (i.e. the reasons for recovery, or pressures that are recognized as causing declines).

# Terrestrial mammals

## *Ungulates*

- The expansion of infrastructure, such as roads, railroads, fences and pipelines, represents a significant challenge to migratory ungulates[7]. These obstacles are increasingly constraining the movements of CMS-listed ungulates, especially in regions such as Central Asia[8] (see **Section 4** – *Mapping the world's ungulate migrations* for additional insights). For example, between 2002 and 2021, mobility declined significantly for the Mongolian Gazelle (*Procapra gutturosa*), a nomadic species that makes some of the longest distance movements ever recorded[9]. Increasing traffic volume leading to a loss of connectivity appears to be a key factor in the decline[9].
- The rapid proliferation of fencing has had a profound impact on many ungulate species around the world. For example, the Mara-Loita Blue Wildebeest (*Connochaetus taurinus*) population declined by 75% since the late 1970s after land use changes were permitted throughout their range[10]. The population has sustained further declines in recent years, coinciding with the rapid expansion of fencing, which has blocked access to key migratory pathways that previously linked seasonal ranges[10-11]. This contrasts with the situation in the Serengeti-Mara population, which has remained stable because its entire migratory range is under some form of protection on both sides of the Kenya-Tanzania border.
- Across the Arctic, populations of migratory tundra Caribou (*Rangifer tarandus*) have declined overall by 65% over the past 20-30 years, with indications that populations are increasingly being affected by climate change and the expansion of human infrastructure such as mines and roads[12]. Many Caribou and Wild Reindeer populations that occur further south are also under threat due to the loss and fragmentation of important forest habitat[13]. Although Caribou are not CMS-listed, their migrations play a central role in the tundra ecosystem and are of immense value to Arctic Indigenous cultures[12].




**Listed in CMS Appendix II at COP14, Guanacos** (*Llama guanicoe*) **exist in isolated populations across their range, which encompasses several South American countries. Entanglement in fences is the main threat to Guanaco migrations in Patagonia, which typically involve short-distance movements between high-altitude summer and low-elevation winter ranges[14].**

# Birds

## *African-Eurasian raptors and other landbirds*

- According to the recent Raptors MOU Conservation Status Assessment Report, the global populations of over half (53%) of the 93 species listed on Annex 1 of the Raptors MOU are declining, with a particularly high proportion of vultures and eagles showing decreasing population trends[15]. For example, a recent study found that African raptor species associated with savanna habitats have undergone widespread declines over the past 20-40 years, based on road transect surveys undertaken across the continent[16].
- The Mid-Term Implementation Review of the Vulture Multi-species Action Plan to conserve African-Eurasian Vultures (Vulture MSAP) provides a detailed update on current situation facing vultures in this region[17]. Most European vulture populations are recovering or stable, and there are also signs that South Asian populations have stabilized at a low level following a historic collapse in numbers driven by unintentional poisoning[17,18]. These trends have been attributed to improvements in legislation and active conservation management[17,19]. However, many vulture populations are still declining rapidly, particularly in Africa[17].
- The main pressures facing raptors in Africa and Eurasia are habitat loss and illegal taking, including hunting and trapping, intentional and unintentional poisoning, and taking for belief-based use, along with electrocution and collisions with energy infrastructure[15]. Information on mortality events derived from tracking data has confirmed that electrocution and collisions with energy infrastructure are a significant cause of human-induced mortality for migratory raptors in the African-Eurasian flyway, alongside illegal killing and poisoning[20].
- Looking beyond raptors, the distributions of other Palearctic migrants contracted substantially in Kenya between 1970 and 2023, according to a cross-comparison of earlier bird atlas maps with more recent citizen science data[21]. These range losses mirror general declines in the population abundance of long-distance Afro-Palearctic migrants in Europe between 1980 and 2017[22]. Long-distance migrants dependent on agricultural systems appear to be suffering the greatest declines, exacerbated by climate change impacts[22,23].




**CMS Appendix I-listed Steppe Eagles** (*Aquila nipalensis*) **migrate thousands of kilometres from breeding areas in China, Central Asia, Mongolia and Russia to non-breeding locations in Africa, the Middle East and southern Asia. Categorized as globally Endangered, populations are threatened by an array of pressures including habitat conversion, illegal killing and collisions with power lines and energy infrastructure[25]. A Global Action Plan on Steppe Eagles is to be presented to COP15.**




**Coordinated conservation action along flyways is crucial for reducing the pressures on migratory shorebirds. While this report highlights new information on alarming population decreases for species in this group, many shorebirds were already known to have declined rapidly over the long-term, including the Critically Endangered Spoon-billed Sandpiper** (*Calidris pygmaea*)**[35].**

## *Shorebirds*

- The global extinction of the Appendix I-listed Slender-billed Curlew (*Numenius tenuirostris*) is now considered confirmed. The species was recently recategorized by the IUCN Red List, on the basis of an analysis incorporating data on threats to the species, historic observations and survey effort[26]. With no confirmed sightings of the species since 1995, the pressures that triggered the loss of the Slender-billed Curlew are poorly known but are likely to have included habitat loss and hunting[26]. The plight of this species offers the world important lessons on the need to take urgent action when substantial population declines are detected.
- Large and accelerating declines have been documented for shorebirds that use the Americas flyway, stretching between the Arctic and South America[27]. Between 1980 and 2019, 18 out of 28 shorebird species analyzed showed clear evidence of population declines, based on counts at stopover sites in the United States of America and southern Canada[27].
- Pronounced long-term declines in the populations of many migratory shorebirds have also occurred in the East Asian-Australasian flyway[28], in the East Atlantic flyway (particularly species breeding in the Arctic and boreal regions[29]), and at coastal sites in India[30]. The main threats affecting shorebird populations globally include the loss and deterioration of key habitats, including at stopover and non-breeding sites[27-31,32], unsustainable taking[33], disturbance, and climate change-driven shifts in the suitability of conditions at breeding sites[34].

# Fish

The first *State of the World's Migratory Species* highlighted fish – both freshwater and marine – as a particular concern, with nearly all (97%) of CMS-listed fish threatened with extinction, and evidence for steep declines in the abundance of monitored fish populations over the last 50 years. Recent insights from the literature confirm these negative trends, underscoring the need for intensified action focussing on this group of species.

## *Freshwater fish*

- According to the most recent update of the Living Planet Index (LPI), monitored populations of migratory freshwater fish declined by 81% on average globally between 1970 and 2020[36]. Average population declines were particularly steep in Latin America & the Caribbean (-91%) and Europe (-75%) but were less pronounced in North America (-34%) and Asia-Oceania (-28%). There was insufficient data to produce a trend for Africa[36].
- Habitat loss, degradation and alterations – including the impacts of dams and other human activities that cause changes in flow regime – was the most widely reported pressure affecting the monitored populations considered in the LPI update, followed by overexploitation[36]. Freshwater migratory species are predicted to suffer growing future impacts from dams, including in the Amazon, Congo, Niger, Mekong and Salween basins[37]. In the Amazon basin, the number of free-flowing rivers >1,000 km in length is projected to decrease from 16 to nine if planned dams are built[38]. These changes are also expected to impact CMS-listed aquatic mammals and reptiles that are reliant on river connectivity, such as the Amazon River Dolphin (*Inia geoffrensis*), the Tucuxi (*Sotalia fluviatilis*) and the South American River Turtle (*Podocnemis expansa*)[38].

## *Sharks and rays*

Since the publication of the first *State of the World's Migratory Species*, several reports and studies have been released that provide updated information on the status of sharks and rays. This includes the recently published IUCN Species Survival Commission (SSC) Shark Specialist Group's report on the '*Global status of sharks, rays and chimaeras*' as well as other key papers[39-41]. These studies found that:

- Sharks and rays as a whole have experienced substantial increases in extinction risk between 1970 and 2020, reaffirming their status as one of the most threatened vertebrate groups[40]. Globally, populations of these species have declined in abundance by half since 1970 as a result of overfishing, based on an analysis of global trends in catch per unit effort[40]. Among taxonomic groups that contain several CMS-listed species, the sawfishes (Pristidae), devil rays (Mobulidae) and hammerhead sharks (Sphyrnidae) are particularly severely threatened[40]. Extinction risk has also risen steeply for the requiem sharks (Carcharhinidae), which includes strongly declining CMS-listed species such as the Critically Endangered Oceanic Whitetip (*Carcharhinus longimanus*)[43].
- Taking a regional perspective, the most pronounced increases in extinction risk for sharks and rays have occurred in the tropical Atlantic Ocean, the Northern Indian Ocean, the Indo-West Pacific Ocean and the Mediterranean and Black Sea regions[40]. Regional populations of wide-ranging sharks and rays may rebound, if science-based fisheries management approaches are implemented[41].
- Overfishing – including both targeted fisheries and incidental bycatch – remains the primary threat affecting sharks and rays[39]. The loss and degradation of coastal habitats such as mangroves has also contributed to dramatic long-term declines and substantial range loss for coastal species such as sawfishes[42], all five of which are now categorized by the IUCN Red List as Critically Endangered[43].
- Climate change, including the impacts of ocean warming, acidification and potentially deoxygenation, has also been identified as an additional pressure that will likely have a strong impact on coastal and pelagic species[39,44-45].




**The Critically Endangered Angelshark** (*Squatina squatina*) **– listed on CMS Appendices I and II and Annex 1 of the Sharks MOU – was formerly widespread in coastal waters of the northeast Atlantic Ocean and the Mediterranean Sea, but due to overexploitation, populations are now increasingly fragmented[39,46]. A CMS Single Species Action Plan for Angelshark in the Mediterranean Sea was adopted at COP14.**

# Reptiles

## *Marine turtles*

- The conservation status of marine turtles appears to be improving overall. In a recent comprehensive assessment, conducted by the IUCN SSC Marine Turtle Specialist Group (MTSG), the proportion of marine turtle regional management units (RMUs) scored as "low risk-low threat" increased from 23% in 2011 to 40% in 2024[47]. Over the same period, risk-threat categories improved for 54% and deteriorated for 15% of RMUs[47].
- The results of this updated assessment – which can be viewed online via an interactive data dashboard – match the picture emerging from a recent synthesis of trends in annual nesting numbers, which shows upward or stable trends for most monitored populations[48]. In some cases, positive trends have been attributed to conservation measures, including efforts to reduce take and the establishment of protected areas[49].
- Many marine turtle populations remain threatened, however[47]. Viewed from a regional perspective, while improvements in conservation status were more common in Atlantic Ocean RMUs, most of the "high risk-high threat" RMUs were concentrated in the Pacific Ocean[47] (additional modelling suggests that four out of the five species in this region face high levels of extinction risk[50]). Of the nine "high risk-high threat" RMUs, four were Leatherback Turtle RMUs (*Dermochelys coriacea*) and three were Loggerhead Turtle (*Caretta caretta*) RMUs[47].
- Despite the overall signs of recovery noted above, marine turtles still face severe threats[49]. According to the IUCN SSC MTSG assessment, fisheries bycatch was judged to be the most severe pressure across all marine turtle RMUs, showing relatively little sign of improvement since 2011[47]. Other continuing and emerging pressures facing marine turtles include coastal development, plastic pollution, climate change and direct take[49].




**At monitored nesting beaches, population abundance trends of Green Turtles (*Chelonia mydas*) are generally increasing or stable[48], although dramatic declines have been reported at one of the world's largest nesting colonies[51]. Action is still needed to address persistent threats facing this species such as bycatch, pollution and the loss of seagrass meadows which provide foraging habitat[49].**

# III. Progress identifying and protecting important habitats for CMS-listed species

Many migratory species rely on a network of areas and discrete sites that provide vitally important breeding, non-breeding, feeding or stopover habitat. This section provides a summary of recent progress in identifying and protecting critical sites for CMS-listed species globally, building on an analysis conducted for the first *State of the World's Migratory Species*. Action to identify and protect important habitats for CMS-listed species is not just a vital component of the Samarkand Strategic Plan for Migratory Species 2024-2032, but will also contribute significantly to efforts to maintain and enhance ecological connectivity globally. Tackling the loss, degradation and fragmentation of important habitats for migratory species is also crucial for achieving multiple targets included in the Kunming-Montreal Global Biodiversity Framework.

## Identifying important habitats

Multiple approaches have been developed to identify important areas for biodiversity globally[1]. These include Key Biodiversity Areas (KBAs), developed as an umbrella approach for identifying important sites for all taxonomic groups, ecosystems, ecological integrity, biological processes and irreplaceability[2]. KBAs are identified at the national level using a set of quantitative criteria[2]. For example, sites can be identified as KBAs if they support a significant proportion of the worldwide population of a globally threatened species, or if they hold significant demographic aggregations of a species during one or more key stages of its life cycle, among other criteria.

In addition to KBAs, other taxon-specific initiatives with a global scope[i], such as Important Marine Mammal Areas (IMMAs), Important Shark and Ray Areas (ISRAs) and Important Marine Turtle Areas (IMTAs), are also particularly relevant to CMS (see **Box 1**). There are differences between the approaches used to identify important locations under these frameworks[2-3], including differences in scale. While KBAs are defined as sites that are actually or potentially manageable as a unit[1], IMMAs and ISRAs may include larger areas, such as coastal or trans-oceanic migratory corridors[3]. The IMMA, ISRA and IMTA initiatives also use evidence-based criteria to identify discrete portions of habitat that have the potential to be managed for conservation[4-6].

Many important habitats for CMS-listed species have been identified and recognized as KBAs, IMMAs and/or ISRAs, but considerable geographic and taxonomic gaps still remain (**Figure 3.1**). Of the 1,200 CMS-listed species, 782 (65%) have had at least one important site or area recognized through one or more of these initiatives at the time of writing (September 2025). Of the 16,589 KBAs that have been recognized globally to date, 9,372 (56%) have been identified as being important for 718 (60%) of the 1,200 CMS-listed species. This means that each of these sites supports population sizes of one or more CMS-listed species that exceed the thresholds for at least one KBA criterion.

KBAs or IMMAs have also been identified for 57 (86%) of the 66 CMS-listed aquatic mammals (**Figure 3.1**). Similarly, KBAs or ISRAs have been delineated for 48 (76%) of the 63 CMS-listed fish (**Figure 3.1**), including 39 (98%) of the 40 CMS-listed sharks/rays[7]. These figures reflect the considerable progress made identifying IMMAs and ISRAs by the IUCN Marine Mammal Protected Area Task Force and the IUCN SSC Shark Specialist Group in recent years (**Box 1**).

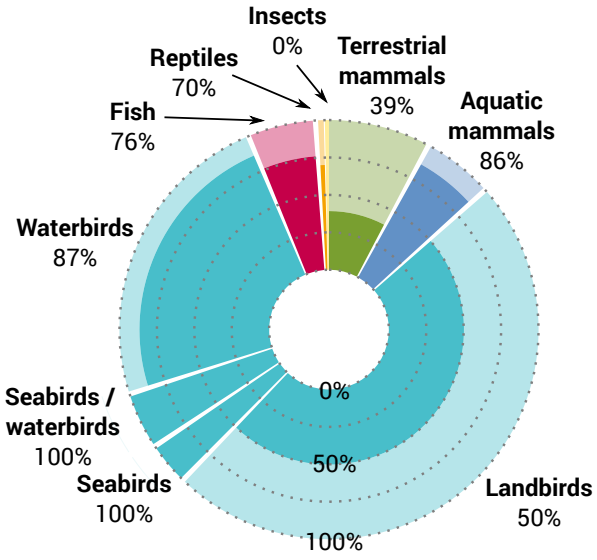



***Figure 3.1:*** *Proportion of CMS-listed species (n=1,200) for which at least one Key Biodiversity Area (KBA), Important Marine Mammal Area (IMMA) or Important Shark and Ray Area (ISRA) has been identified (n=782), by taxonomic group, as shown by the shaded areas within each segment shown in the chart. The width of the segments is proportional to the number of CMS-listed species that fall within each taxonomic group (i.e. the segment for landbirds is the widest because 49% CMS-listed species are landbirds). Data sources: World Database of Key Biodiversity Areas (2025); searchable database of Important Marine Mammal Areas (2025); IUCN SSC Shark Specialist Group (2025)[7].*

[i] A range of other regional site networks are also relevant to CMS-listed species, including information on Internationally Important Raptor Areas gathered under the Raptors MOU (see Table 3, contained in Annex 3 of the Raptors MOU text), the Critical Sites Network (CSN) developed by BirdLife International and Wetlands International to support the conservation of watebirds in Africa and Eurasia, the IOSEA Marine Turtles Site Network, the Western Hemisphere Shorebird Reserve Network (WHSRN), the East Asian-Australasian Flyway Partnership network of important sites, and priority transboundary conservation units identified under the Central Asian Mammals Initiative (CAMI) (see UNEP/CMS/CAMI-TW/Doc.3).

## *Box 1: Identifying IMMAs, ISRAs and IMTAs for CMS-listed marine migratory species*

As of July 2025, 323 **Important Marine Mammal Areas (IMMAs)** have been identified for 100 species of aquatic mammals, including 46 CMS-listed species, as part of a process involving regional identification workshops convened by the IUCN Marine Mammal Protected Area Task Force[8]. The combined surface area of these IMMAs – viewable online through the IMMA e-Atlas – is equivalent to 17.8% of the global ocean[8]. Since March 2023, regional IMMA workshops have been held in the North East Atlantic Ocean and the North West Atlantic Ocean and Wider Caribbean regions with the aim of identifying further sites[8]. A study was also conducted to explore ways to monitor and assess the status of IMMAs, focussing on pilot sites across six different countries[9].

The **Important Shark and Ray Area (ISRA)** project was established by the IUCN SSC Shark Specialist Group in 2022. The global identification of ISRAs is undertaken regionally through an expert driven process, and over 74% of global marine waters has so far been surveyed for ISRAs in nine of thirteen regions[10]. As described in greater detail in a report produced by the IUCN SSC Shark Specialist Group (*Ocean Travellers: Safeguarding Critical Habitats for Migratory Sharks and Rays*), 816 ISRAs have been identified globally, of which 771 ISRAs have been identified for 38 of the 40 CMS-listed sharks and rays[10]. It is anticipated that assessments in the remaining four regions (North America and Caribbean Atlantic, African Atlantic, Australia and Southeast Indian Ocean, and North American Pacific) will be completed by early 2027[10].

Additionally, although the IUCN SSC Marine Turtle Specialist Group (MTSG) established **Important Marine Turtle Area (IMTA)** criteria and guidelines in 2021, to date, no IMTAs have been formally identified. To address this gap, the Blue Corridors for Turtles partnership is seeking to synthesize and assess connectivity data at a global scale and support the identification of IMTAs through regional workshops (under the auspices of the MTSG). Blue Corridors for Turtles is a global partnership, with coordination from WWF and the CMS Secretariat, the University of Queensland, the State of the World's Sea Turtles (SWOT) programme (Oceanic Society) and Collecte Localisation Satellites - Argos system (CLS-Argos) as partners. A regional initiative to identify and propose IMTAs in West and Central Africa is also underway, led by the RASTOMA network with support from The George Washington University, the SWOT programme, and the Office français de la biodiversité.

The basic summary statistics provided above (see **Figure 3.1**) represent just a **first step** towards a more complete understanding of the progress made in identifying important areas for CMS-listed species. As migratory species under CMS are by definition found in several countries, and typically depend on multiple sites, used at different stages of their annual cycle and often scattered across multiple jurisdictions, more sophisticated analyses – taking connectivity between sites into account – will be needed to understand how serious existing knowledge gaps are. Some CMS-listed migratory species occur at low densities across large geographic areas[11-12]; site-scale conservation is likely to be less relevant to these species, whose conservation requires broader policy responses.

Identifying globally important habitats for migratory species is an **ongoing process**. It is vital that work continues to fill the substantial knowledge gaps that still exist in relation to the sites used by many migratory species over the course of their life and annual cycles. For example, while KBAs have been identified in 99% of countries and territories, only a small minority have so far comprehensively identified sites using the new Global KBA standard[1]. Work is also underway under several CMS Instruments to compile, update and expand information important sites at the flyway or regional level. This includes efforts to expand the list of internationally important sites for migratory African-Eurasian raptors under Raptors MOU[j] and to establish a comprehensive Flyway Site Network[k] under AEWA (the Agreement on the Conservation of African-Eurasian Migratory Waterbirds).

Making better use of animal movement data represents a promising way of addressing gaps in site information. Recent syntheses of tracking data have facilitated the identification of important sites for highly mobile taxa that move vast distances across remote areas, such as seabirds and marine mammals[13]. Despite the technological improvements in tracking devices that have allowed growing volumes of movement data to be collected, detailed information on migratory movements are still lacking for many migratory species[14-16]. For example, avian tracking studies have been skewed towards larger-bodied species and particular geographic regions, potentially reflecting technological constraints as well as geographic disparities in funding available for research[14-16]. Initiatives designed to promote the mobilisation of animal movement data for global conservation goals, such as the Animal Movement Biodiversity Observation Network (Move BON), anchored within the GEO BON framework, can potentially help to address these issues[17]. One of the main aims of Move BON is to improve the degree of coordination between existing tracking initiatives, in order to fill spatial and taxonomic gaps – and increase access to – movement data.

Ultimately, although progress identifying important habitats has been made since COP14, more survey, tracking and monitoring efforts are needed to identify comprehensive networks of sites for migratory species globally.

[j] The Technical Advisory Group (TAG) of the Raptors MOU also conducted a pilot site network analysis to identify gaps in the network sites listed under Table 3 of Annex 3 of the MOU, for a representative set of eleven species.

[k] Linked to Objective 3 of the AEWA Strategic Plan for 2019-2027, AEWA Contracting Parties (CPs) agreed to review and confirm inventories of nationally and internationally important sites for migratory waterbirds. According to the Ninth Edition of the AEWA Conservation Status Report (CSR9), 40 countries, including 34 AEWA Contracting Parties (40% of all Parties) and six non-Party Range States (17% of all non-Party Range States), had submitted inventories of nationally and internationally important sites to the AEWA Secretariat, by July 2025.

# Coverage of KBAs by protected and conserved areas

Site identification initiatives provide crucial information that can help to target area-based conservation efforts to the most important sites for the global persistence of biodiversity[1]. Globally, on average, just over half (52.6%) of the area of each KBA identified as being important for CMS-listed species was covered by protected and conserved areas in 2025 (**Figure 3.2**). While coverage levels have risen since the 1980s, the rate of progress appears to have slowed in recent years (**Figure 3.3**). Europe currently has the highest percentage coverage (65.5%), followed by Africa (50.7%). Asia has the lowest percentage coverage (35.5%), just below North America (37.6%), Oceania (41.3%) and South & Central America & The Caribbean (41.7%).

Looking across different taxonomic groups of CMS-listed species, mean coverage of KBAs by protected and conserved areas was highest for certain groups of birds (seabirds/waterbirds: 61.8%; waterbirds: 58.6%; landbirds: 58.2%) and terrestrial mammals (60.6%); intermediate for aquatic mammals (43.8%); and lowest for fish and reptiles (both 36.7%). There were 26 globally threatened CMS-listed species for which the mean KBA coverage by protected and conserved areas was less than 25%, including three Critically Endangered species: the Common Guitarfish (*Rhinobatos rhinobatos*), the White-winged Flufftail (*Sarothrura ayresi*) and the Spoon-billed Sandpiper (*Calidris pygmaea*).

Taken together, these results suggest that there are potentially substantial gaps in the protection of important habitats for CMS-listed species globally. The identification of unprotected sites that are important for the global persistence of CMS-listed species provides a useful resource enabling countries to plan, prioritize and make decisions on these sites, whilst also taking into account (and ensuring the participation of) all relevant stakeholders in decision-making.

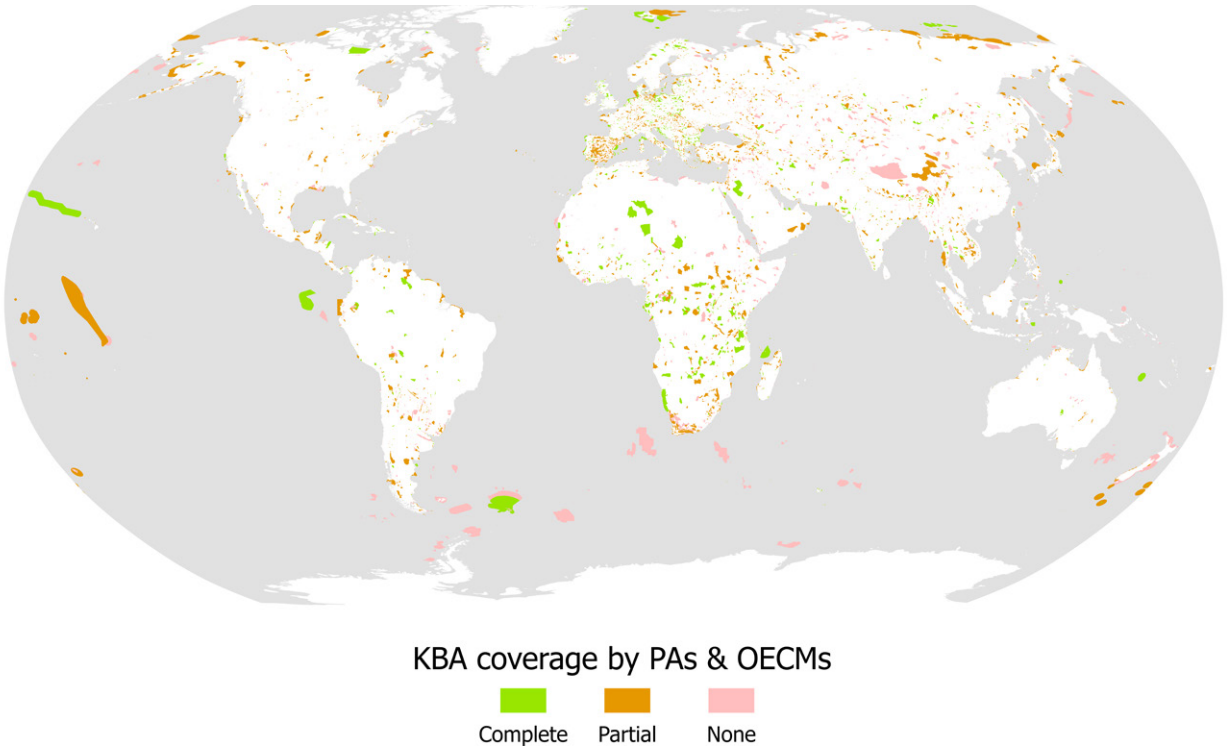
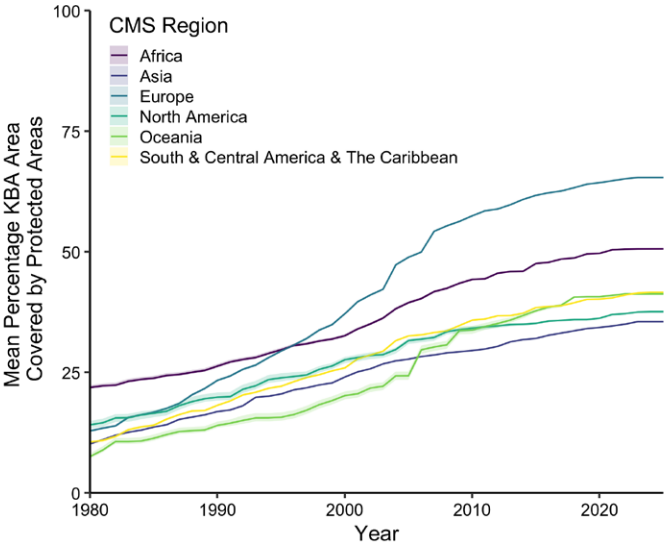



***Figure 3.2:*** *Global map indicating the extent to which Key Biodiversity Areas (KBAs) that have been identified as being important for CMS-listed species are covered by protected areas and other effective area-based conservation measures (OECMs), shown as complete (≥98%), partial (98% - 2%) and no (≤2%) coverage. Data sources: World Database on Protected Areas (WDPA) and World Database on Other Effective Area-Based Conservation Measures (WD-OECM) (2025); World Database of Key Biodiversity Areas (2025). Calculated by BirdLife International (2025).*




**Wetlands, like the Pantanal in South America, provide vital habitat for a diverse range of migratory species. According to the** Global Wetland Outlook 2025**, around over one fifth of global wetlands are reported as being in a poor state, with an increasing number of Ramsar Parties reporting a deterioration in their condition between 2011 and 2021[18]. The top reported negative drivers of changes in the state of wetlands include pollution, urbanisation and industrial/infrastructure development, although drought was highlighted as a concern in Europe[18]. Further action is needed to effectively conserve, manage and restore the world's remaining wetlands, to ensure their biodiversity value is not diminished.**




Future analyses assessing the coverage of IMMAs, ISRAs and IMTAs by protected and conserved areas would also be informative. A recent large-scale analysis of global tracking data compiled by the **MegaMove** project found that increasing marine protected area coverage levels to 30% will still leave approximately 60% of the important areas used by highly mobile marine megafauna for breeding, feeding or migrating unprotected[19]. Broader forms of ocean management designed to mitigate specific pressures over large areas, such as shipping restrictions (e.g. reductions in vessel speed, or changes in shipping routes) or policies designed to reduce bycatch, will also be needed to lessen negative impacts on these species[19-20]. Understanding the state of protection for marine migratory species has been identified as key research aim under the Migratory Connectivity in the Ocean (MiCO) initiative (see **Section 4**).

***Figure 3.3:*** *Regional trends in the mean percentage coverage of Key Biodiversity Areas identified as being important for CMS-listed species by protected areas and other effective-area based conservation measures (OECMs), between 1980 and 2025. Data sources: World Database on Protected Areas (WDPA) and World Database on Other Effective Area-Based Conservation Measures (WD-OECM) (2025); World Database of Key Biodiversity Areas (2025). Calculated by BirdLife International (2025).*

# IV. Recent progress mapping migratory pathways

Mapping the world's migration pathways is a crucial step towards ensuring that migratory populations can continue to safely access the vital breeding, foraging and resting areas that they need to survive. Migration maps derived from empirical tracking data allow migratory animals themselves to tell us which seasonal ranges or corridors are most crucial over the course of their life cycle. The recent growth in animal tracking research has drastically improved the state of knowledge in this area, by enabling migration routes to be mapped in unprecedented detail, and by facilitating the discovery of previously unknown migratory pathways.

Improved maps of migration corridors can help to direct area-based conservation efforts towards critical areas in need of enhanced protection. However, since animal movements often span distances that are orders of magnitude larger than any protected area[1-2], migratory species must be able to travel unimpeded through wider land-, river- or seascapes that are increasingly fragmented by a range of human infrastructure and activities[3-6]. Migration maps – and the tracking data that underpins them – can help to identify potential obstacles to movement, assess the degree of exposure to pressures encountered on migratory journeys, and highlight the broader regions where policy interventions are needed to sustain connectivity in the context of working land- and seascapes[6-8]. Mapping efforts can also reveal the migratory connections that link distant countries[9-11], providing a sound scientific basis for collaborative international conservation efforts.

This section contains an overview of the recent progress made by initiatives dedicated to mapping terrestrial and marine migratory pathways. Here, we feature three initiatives that have been at the forefront of recent efforts to map migrations: the Global Initiative on Ungulate Migration (GIUM), a module of the CMS Atlas of Migration, the Migratory Connectivity in the Ocean (MiCO) system, and the Marine Flyways identified by BirdLife International. Other current modules of the CMS Atlas of Migration include the second edition of the Central Asian Mammals Migration and Linear Infrastructure (CAMI) Atlas, the Eurasian African Bird Migration Atlas and the Marine Turtle Breeding and Migration Atlas ("TurtleNet").

## Mapping the world's ungulate migrations

Contribution by: Thomas Mueller, Janey Fugate and Matthew Kauffman – *Global Initiative on Ungulate Migration (GIUM)*

The Global Initiative on Ungulate Migration (GIUM) unites an international community of conservation-focused migration researchers and conservationists to document and protect the world's key migratory routes for hoofed mammals. By leveraging collaborations with over 80 scientists from more than 50 institutions, the initiative has developed the world's first living Atlas of Ungulate Migration, mapping over 30 of the planet's major ungulate migrations across 17 different ungulate species. For each migration, detailed fact sheets explain the route, summarize specific conservation challenges, and often include supplemental maps showing where these movements intersect with threats or protected areas. For example, a detailed map of the migration of the White-eared Kob (*Kobus kob leucotis*) and Tiang (*Damaliscus lunatus tiang*) in South Sudan and Ethiopia was released for the first time in April 2025. It is the world's largest ungulate migration, involving over five million White-eared Kob, but faces pressure from unregulated hunting and imminent oil development. Mapping is ongoing in many locations around the world, and GIUM plans to significantly expand the Atlas by the end of 2026.

One of the most urgent and consistent threats highlighted by GIUM's work is the proliferation of linear infrastructure—especially roads, railways, and fencing. Such barriers fragment habitats, impede migration, and increase risks for migratory species in multiple regions. This issue is particularly pronounced in Central Asia and Africa, where rapid infrastructure growth has created new obstacles for iconic migratory mammals like Mongolian Gazelles (*Procapra gutturosa*), Saiga Antelopes (*Saiga tatarica*) and Blue Wildebeest (*Connochaetes taurinus*). In these regions, rapidly expanding fence networks and newly constructed transportation corridors increasingly disrupt migratory paths, sometimes truncating entire migrations (**Figure 4.1**). Often, construction occurs before biologists and planners have adequate maps of the population's migratory pathways.

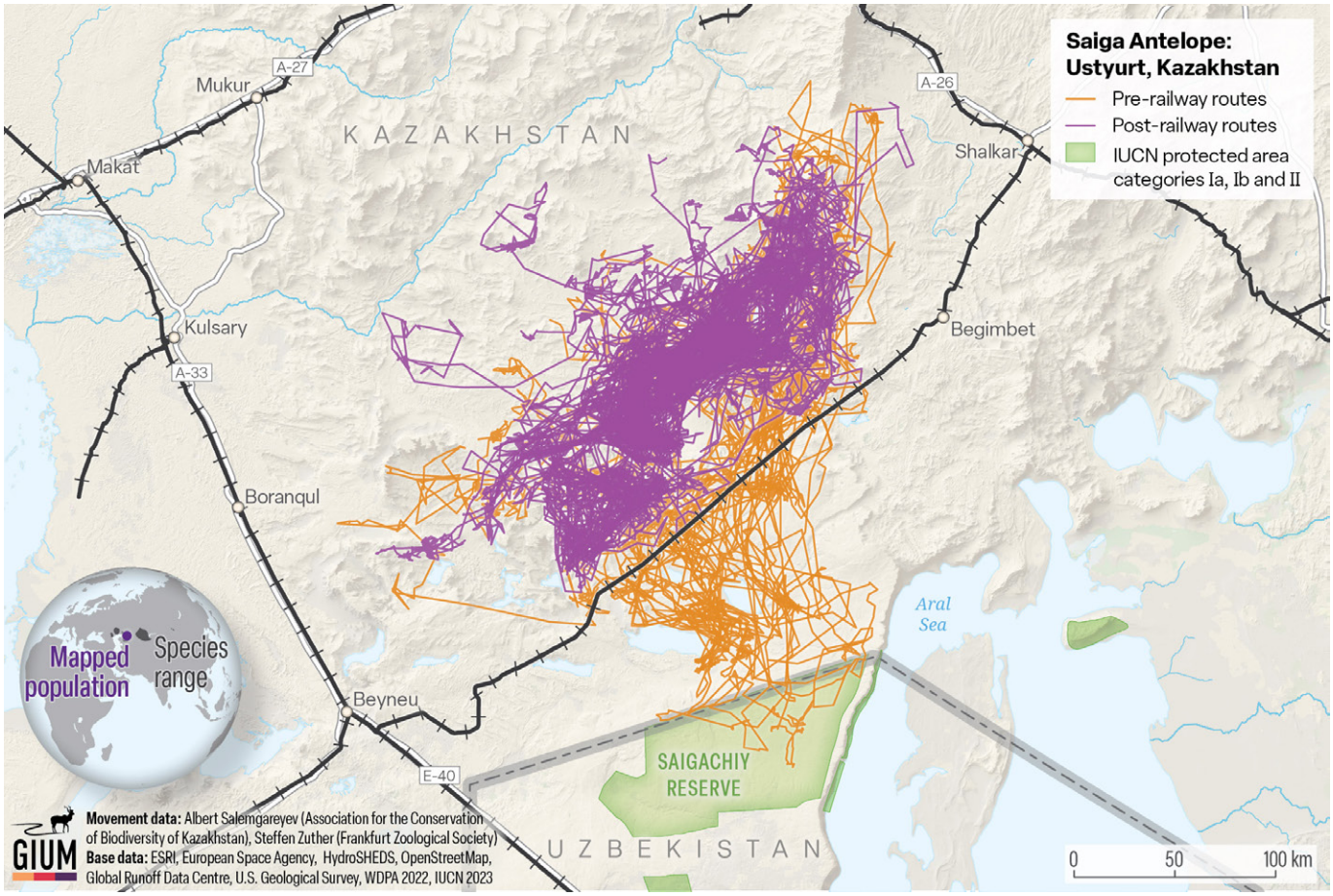



***Figure 4.1:*** *Movement data collected before and after the construction of a new railway in the Ustyurt Saiga Antelope (Saiga tatarica) population's range shows the dramatic effect linear infrastructure can have on the CMS Appendix II-listed Saiga's ability to move freely across the extent of their migratory range. After construction (purple tracks), saigas no longer cross the border to Uzbekistan and access the protected area to the south, which previously provided critical winter habitat (orange tracks). Map credit: Salemgareyev, A. & S. Zuther. 2024. Saiga Antelope: Ustyurt, Kazakhstan. Global Initiative on Ungulate Migration, editors. Atlas of Ungulate Migration. Convention on the Conservation of Migratory Species of Wild Animals.*

The Atlas of Ungulate Migrations equips conservationists, land managers, and policymakers with the data and tools needed to prioritize landscape connectivity and plan infrastructure with migratory wildlife in mind. It provides visuals of migration routes in addition to actionable threat assessments so that future development can safeguard the hoofed migrations that underpin global biodiversity.




**Linear infrastructure can have a dramatic effect on the ability of Saiga Antelope** (*Saiga tatarica*) **populations to move freely across their migratory range.**

# Advancing our understanding of marine migratory connectivity

Contribution by: Angela Liu, Lily Bentley and Daniel Dunn – *University of Queensland*

The Migratory Connectivity in the Ocean system (MiCO) is an open-access online system that describes information on migratory connectivity for over 100 CMS-listed marine species. It represents a critical effort to synthesize and translate the growing amounts of published marine tracking data into actionable knowledge for policymakers. Built from a systematic literature review containing over 1,200 published articles, MiCO aggregates movement data into key "metasites" that delineate breeding, foraging, nesting, or migrating areas. The connections between these metasites are represented as interactive networks in the online system (**Figure 4.2**), displayed alongside information on global species distribution, age, activity, and sex ratio within the metasites, and for some species, core use areas from tracking data. A recent Nature Communications article summarizing the database highlights that on average, countries were connected to around 28 other national territories or to areas beyond national jurisdiction by migratory marine species, demonstrating the extensive transboundary nature of marine migrations, and the importance of transboundary cooperation in the management of these species[12].

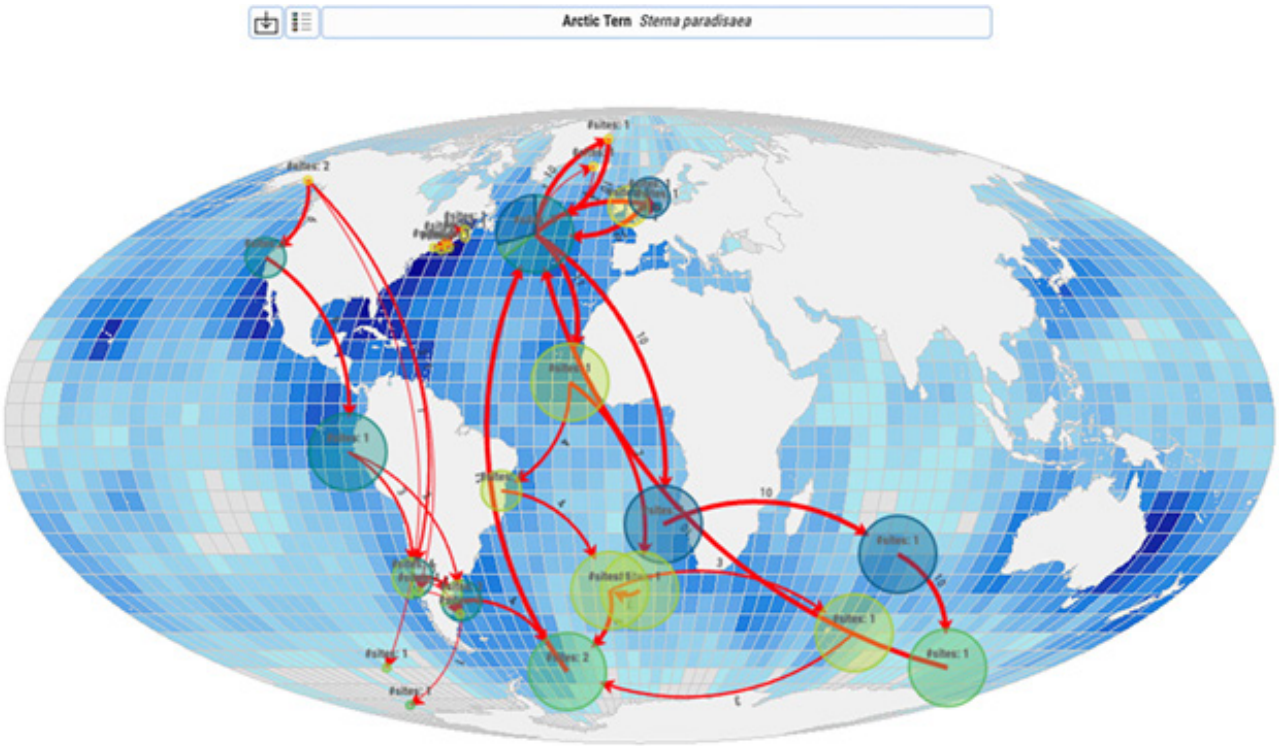



***Figure 4.2:*** *Migratory connections for the Arctic tern (Sterna paradisaea) in MiCO.*

MiCO was specifically developed to help inform the delivery of a "well-connected" network of marine protected areas to meet Aichi Target 11 and now the Kunming-Montreal Global Biodiversity Framework Target 3. Previously, connectivity among protected areas was calculated as by the distance between them or via models of larval transport. This dataset opens an entirely new way to understand connectivity and calculate connectivity between MPAs – and one that is focused on the species we most frequently seek to protect. Current research aims to leverage MiCO alongside important area datasets such as the Key Biodiversity Areas (KBAs), Important Marine Mammal Areas (IMMAs), Important Shark and Ray Areas (ISRAs) and Ecologically and Biologically Significant Marine Areas (EBSAs), to better understand connectivity between these sites, and to provide a framework to understand the state of protection of marine migratory megavertebrates. Critically, MiCO also helps us identify taxonomic and geographic gaps in our knowledge of migratory species' movements, enabling new research to focus on areas of specific need.

# Mapping marine flyways for migratory seabirds

Another significant development relevant to migratory connectivity in the marine realm is the identification of the six major Marine Flyways using tracking data collated in BirdLife International's Seabird Tracking Database (the largest existing compilation of seabird tracking data, with over 77 million data points for over 180 species). These flyways help to illustrate the broad-scale migratory routes followed by 151 species of seabirds across the world's oceans (**Figure 4.3**)[13]. A draft Resolution on Seabirds and Marine Flyways will be discussed at CMS COP15 to formally recognize marine flyways and their contribution in strengthening international cooperation for the conservation of seabirds.

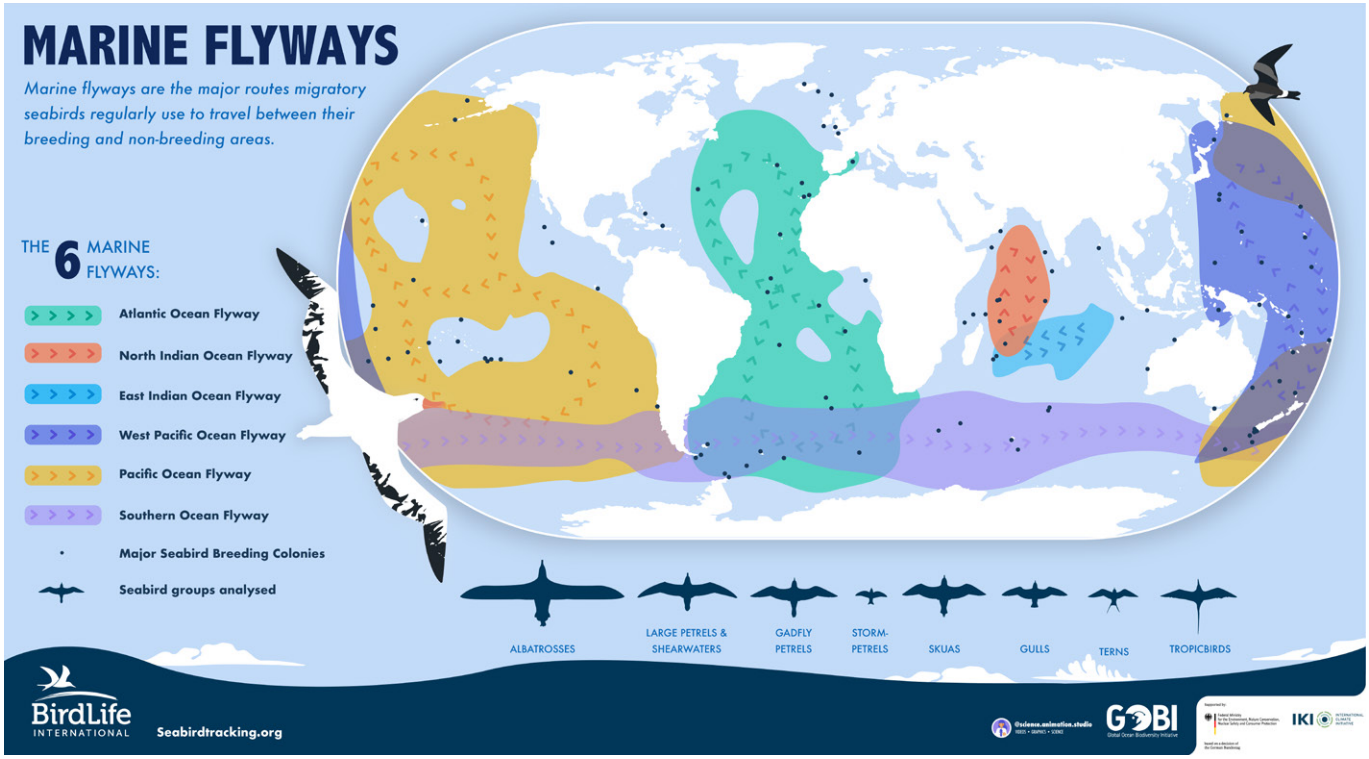



***Figure 4.3:*** *The six marine flyways across the world's oceans highlighting the repeatable migration of pelagic seabirds. Marine flyways are primarily spread across the High Seas, but also overlap with the Exclusive Economic Zones (EEZs) of 54 countries, including 35 Parties to CMS[14]. Image credit: BirdLife International.*




**Globally Endangered Antipodean Albatrosses (*Diomedea antipodensis*) migrate east along the southern part of the Pacific Ocean Flyway, from New Zealand towards the coast of Chile.**

# Conclusion

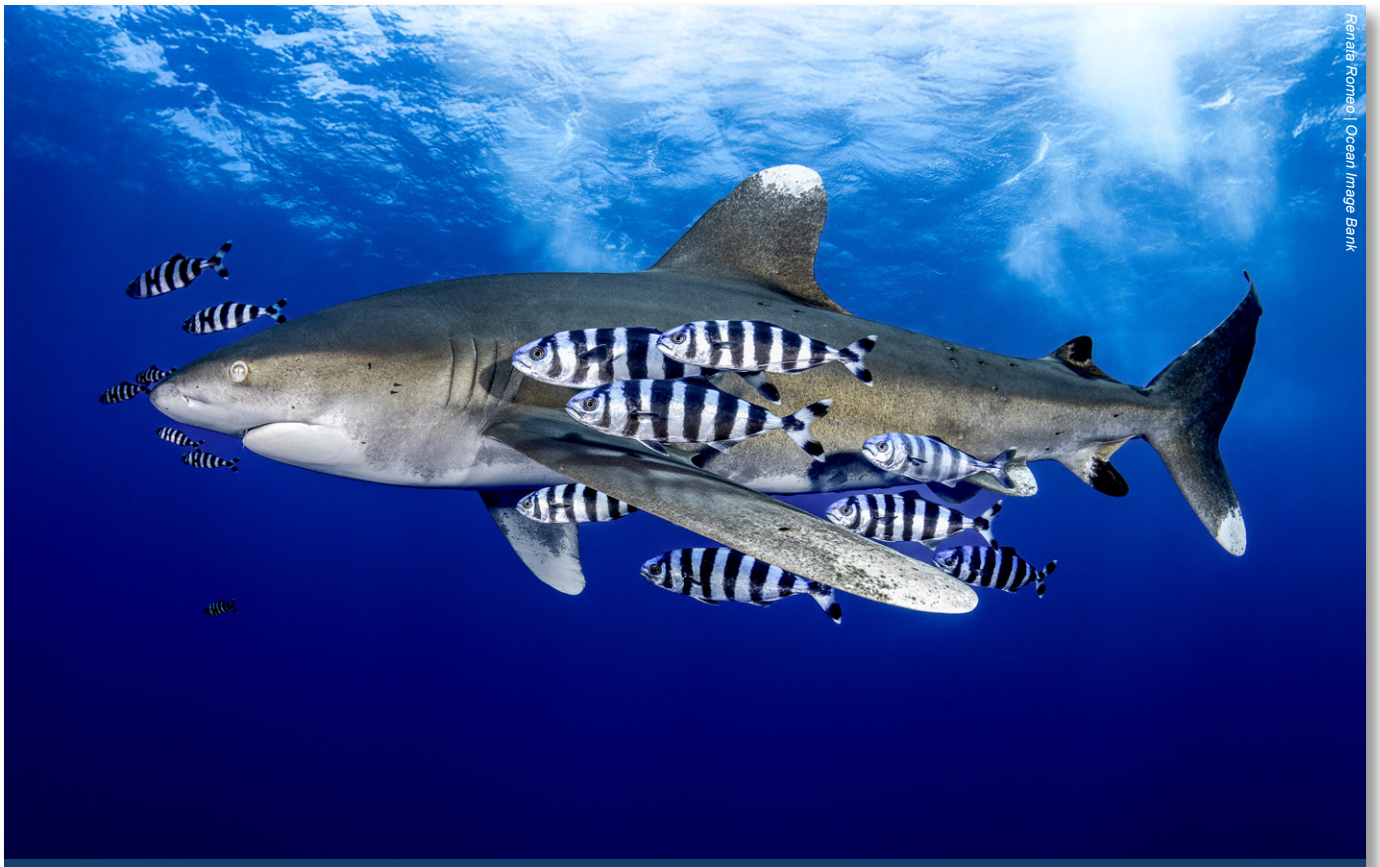
The first *State of the World's Migratory Species*, launched at CMS COP14 in February 2024, revealed that CMS-listed species face escalating levels of extinction risk, with more species' global populations deteriorating than improving between 1988 and 2020. Levels of extinction risk also increased among the wider group of all migratory species, which includes many globally threatened species not listed in the CMS Appendices. The first *State of the World's Migratory Species* also found that 22% of CMS-listed species were globally threatened and 44% were undergoing global population declines, a greater proportion than those with stable (31%) or increasing (12%) population trends. By analysing a more recent version of the IUCN Red List, which included multiple new assessments for CMS-listed species, this interim report finds that 24% of CMS-listed species are now threatened with extinction, and 49% have decreasing population trends.

While not all CMS-listed species have been re-assessed by the IUCN Red List since the first *State of the World's Migratory Species*, twenty-six species have moved to a more threatened IUCN Red List category, and only seven have transitioned to a less threatened category. These statistics underscore the need for urgent conservation action. Although this report includes some inspirational examples of successful conservation efforts, the majority of the recently reported population changes highlighted here are a cause for concern.

The first *State of the World's Migratory Species* demonstrated that, although some important knowledge gaps exist, the anthropogenic pressures facing CMS-listed species are relatively well understood. These pressures include habitat loss and degradation, habitat fragmentation, overexploitation, pollution, climate change and invasive species. The first *State of the World's Migratory Species* outlined a clear set of specific recommendations for priority actions that, if implemented at scale, would help to combat these pressures, and ultimately improve the conservation status of migratory species. These recommendations are unchanged and should be acted on with greater urgency.

In particular, action to protect, connect and restore habitats remains vitally important, if the integrity of the ecological networks and ecosystems that CMS-listed species rely on is to be maintained. While progress has been made in identifying important sites and migratory pathways, survey, monitoring and tracking work is still needed to identify the comprehensive networks of sites and areas used by migratory species globally. The novel insights provided by initiatives dedicated to mapping migratory pathways will play a vital role in improving the evidence base needed to support action.

Additionally, swift collaborative action is needed to tackle overexploitation, reduce the damaging impacts of environmental pollution, and address the root causes and cross-cutting impacts of climate change. Accelerating progress in all of these areas will secure a better future for CMS-listed species, in line with the vision outlined in the Samarkand Strategic Plan for Migratory Species 2024-2032.




**The Critically Endangered Oceanic Whitetip** (*Carcharhinus longimanus*) **is listed on CMS Appendix I.**

# Appendix

**Table 1:** *Overview of the 34 CMS-listed species that have been re-categorized by the IUCN Red List, since the analysis conducted for the State of the World's Migratory Species (incorporating data from IUCN Red List version 2022-2, released 1 April 2022): these include seven positive changes, twenty-six negative changes (orange rows) and one change from Data Deficient to Least Concern (grey row). Globally or regionally threatened species are highlighted in bold. For each species, the table provides information on the change in conservation status and a summary of the rationale for the current IUCN Red List category, as described in the species assessment. Status as of August 2025 (incorporating data from IUCN Red List version 2025-1, released 27 March 2025).*

| *Scientific name* (Common name) | CMS App. | Change in IUCN Red List category (Popn. trend) | Summary of rationale for current IUCN Red List category and major threats (*all quantitative estimates of population change refer to the past three generations*) |
|---|---|---|---|
| **Terrestrial mammals** | | | |
| ***Plecotus kolombatovici*** **(Balkan Long-eared Bat)** | II | NT (↓)* → VU (↓)* | Population decline >10% suspected; habitat loss and degradation are major threats. |
| ***Oryx dammah*** **(Scimitar-horned Oryx)** | I/II | EW → EN (↑) | Re-establishment of a viable wild population in Chad. |
| *Saiga tatarica* (Saiga Antelope) | II | CR (↓) → NT (↑) | Population recovery following disease outbreaks; the EN, VU or LC categories are considered as plausible as NT, due to multiple unpredictable factors that may affect the population in future. |
| **Aquatic mammals** | | | |
| ***Monachus monachus*** **(Mediterranean Monk Seal)** | I/II | EN (↑) → VU (↑) | Recent population increases and local range expansion; global population size remains small. |
| **Birds** | | | |
| *Anser canagicus* (Emperor Goose) | II | NT (↓) → LC (↑) | Population appears to have increased recently; population size does not meet the VU threshold. |
| ***Anser cygnoid*** **(Swan Goose)** | I/II | VU (↓) → EN (↓) | Evidence for accelerating declines; ongoing threats from habitat loss, disturbance and climate change. |
| ***Asarcornis scutulata*** **(White-winged Duck)** | II | EN (↓) → CR (↓) | Population decline due to habitat loss, disturbance and hunting probably >80%; populations are now small and fragmented. |
| *Mareca falcata* (Falcated Duck) | II | NT (↓) → LC (-) | Large population, population trend appears to be stable. |
| ***Hirundo atrocaerulea*** **(Blue Swallow)** | I/II | VU (↓) → EN (↓) | Small, declining population, threatened by habitat loss and degradation. |
| ***Otis tarda*** **(Great Bustard)** | I/II | VU (↓) → EN (↓) | Rapid population declines across most of the species' range; threats include habitat alteration, infrastructure impacts, climate change and illegal taking. |
| *Terpsiphone atrocaudata* (Japanese Paradise-Fly-catcher) | II | NT (↓) → LC (-) | Species has a large range, population trend appears to be stable. |
| *Arenaria interpres* (Ruddy Turnstone) | II | LC (↓) → NT (↓) | Estimated population reduction of 20-29%; exact drivers of decline are unknown. |
| *Calidris alpina* (Dunlin) | II | LC (↓) → NT (↓) | Suspected population decline of 20-29%; exact drivers of decline remain unknown. |
| ***Calidris falcinellus*** **(Broad-billed Sandpiper)** | II | LC (↓) → VU (↓) | Estimated population declines of 30-49%; drivers poorly known, but likely to include loss/degradation of breeding habitat. |
| ***Calidris ferruginea*** **(Curlew Sandpiper)** | II | NT (↓) → VU (↓) | Probable population decline of 30-49%; likely causes include habitat loss/degradation and climate change. |
| ***Calidris fuscicollis*** **(White-rumped Sandpiper)** | II | LC (↓) → VU (↓) | Recent monitoring suggests a rapid population decline of 40-49%; drivers of decline are poorly understood. |
| *Calidris himantopus* (Stilt Sandpiper) | II | LC (↑) → NT (↓) | Population estimated to be decreasing by 20-29%; causes of decline are uncertain. |
| *Calidris minutilla* (Least Sandpiper) | II | LC (↓) → NT (↓) | Recent monitoring suggests a moderately rapid decline; drivers are very poorly known. |
| ***Calidris subruficollis*** **(Buff-breasted Sandpiper)** | I/II | NT (↓) → VU (↓) | Evidence for a moderately rapid to rapid population decline, driven by habitat loss at non-breeding and stopover sites. |
| *Charadrius dealbatus* (White-faced Plover) | II | DD (?) → LC (?) | Previously poorly known, but recently confirmed to be fairly widespread; population size suspected to be large. |

| *Scientific name* (Common name) | CMS App. | Change in IUCN Red List category (Popn. trend) | Summary of rationale for current IUCN Red List category and major threats (*all quantitative estimates of population change refer to the past three generations*) |
|---|---|---|---|
| **Birds *(continued)*** | | | |
| ***Charadrius mongolus*** **(Siberian Sandplover)** | II | LC (?) → EN (↓) | Estimated population decline of 50-62%; threatened by the loss and degradation of stopover habitat and climate change. |
| *Charadrius vociferus* (Killdeer) | II | LC (↓) → NT (↓) | Estimated population reduction of >20%; uncertain drivers of decline. |
| ***Limnodromus griseus*** **(Short-billed Dowitcher)** | II | LC (↓) → VU (↓) | Estimated population decline of 20-49%; uncertain drivers of decline. |
| *Limnodromus scolopaceus* (Long-billed Dowitcher) | II | LC (?) → NT (↓) | Suspected population decline of 20-29%; uncertain drivers of decline. |
| ***Limosa fedoa*** **(Marbled Godwit)** | II | LC (↓) → VU (↓) | Rapid population decline noted; threatened by the loss of breeding and staging habitat. |
| ***Limosa haemastica*** **(Hudsonian Godwit)** | II | LC (↓) → VU (↓) | Suspected population decline of 20-37%; exact drivers uncertain. |
| ***Pluvialis squatarola*** **(Grey Plover)** | II | LC (↓) → VU (↓) | Estimated population reduction of 30-49%; the precise drivers are unknown. |
| ***Pluvianellus socialis*** **(Magellanic Plover)** | I/II | NT (-) → VU (-) | Small global population size; stable population trend. |
| *Tringa brevipes* (Grey-tailed Tattler) | II | NT (↓) → LC (-) | Species has a large range; population trend suspected to be stable. |
| **Tringa flavipes (Lesser Yellowlegs)** | II | LC (↓) → VU (↓) | Estimated population reduction of 26-49%; drivers may include unsustainable taking. |
| *Tringa melanoleuca* (Greater Yellowlegs) | II | LC (-) → NT (↓) | Suspected population decrease of up to 29%; potential drivers include taking. |
| ***Spheniscus demersus*** **(African Penguin)** | II | EN (↓) → CR (↓) | Population decreasing extremely rapidly; likely main drivers are impacts of fisheries and climate change on prey. |
| **Fish** | | | |
| ***Acipenser ruthenus*** **(Sterlet)** | II | VU (↓)* → EN (↓)* | Wild populations estimated to have declined by 60-70%. |
| ***Anoxypristis cuspidata*** **(Narrow Sawfish)** | I/II | EN (↓) → CR (↓) | Global population reduction suspected >80% and substantial range loss, driven by overexploitation and habitat degradation. |

*Refers to the Europe assessment. The Appendix II listings of *Plecotus kolombatovici* and *Acipenser ruthenus* apply to the European and Danube populations, respectively.

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# IV. Recent progress mapping migratory pathways

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