



# The need to protect migratory species worldwide

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Billions of animals are regularly on the move annually. These species migrate on land, in water and in the sky. Migratory species include some of the most iconic species on the planet such as sea turtles, whales and sharks in our oceans, elephants, wild cats, and herds of hooved species that cross plains and deserts, raptors, waterbirds and songbirds that cross through the skies, and even insects such as the monarch butterfly. They travel frequently, sometimes thousands of miles, to reach places where they breed or feed, but they also face enormous challenges and threats along the way. When species cross national borders, their survival depends on the efforts of all the countries in which they are found.

Therefore, the Convention on the Conservation of Migratory Species of Wild Animals (CMS) was adopted in June 1979 to conserve and effectively manage migratory species and their habitats, while recognizing that the conservation of migratory species requires the cooperation of countries across national boundaries, in all places where those species spend any part of their life cycle. The Convention has grown in scope and scale over the past four decades since its adoption in June 1979. There are currently 133 CMS signatory countries. These countries have made commitments to take action to conserve migratory species and their habitats, as well as to address factors that impede their migration. In addition to the 133 CMS Parties, there are a further 28 countries that, although not Party to the Convention, are Party to one or more of the Agreements and/or are signatories to one or more of the Memoranda of Understanding (MOU) concluded under the umbrella of CMS. At the moment, there are 1,189 species listed in the two Annexes of the CMS Convention, of which there are 962 species of birds, 94 species of terrestrial mammals, 64 species of aquatic mammals, 58 species of fishes, 10 species of reptiles and 1 species of insect.

## THE IMPORTANCE OF MIGRATORY SPECIES AND THEIR DECLINE

Migratory animals are essential components of the ecosystems that support all life on Earth. Globally, billions of individual animals embark on migratory journeys each year, connecting distant continents, countries and habitats through their migration routes. Migratory species are of ecological, economic and cultural importance. Within ecosystems, migratory species perform a variety of crucial functions, ranging from the large-scale transfer of nutrients between environments, to the positive impacts of grazing animals on grassland biodiversity [1,2]. People around the world

are reliant on these species as sources of food, income and enjoyment. Along their migration routes, migratory species provide vital benefits for people, from pollination of crops to supporting sustainable livelihoods. Migratory species are also valuable indicators of overall environmental health as trends in the conservation status and behaviour of migratory species can provide an indication of the state of habitats along entire migration routes. However, declines in migratory species can lead to the loss of important functions and services. Conservation of migratory species can also support the continued resilience of ecosystems to changing environments, including mitigating the impacts of climate change.

According to a report by the Conservation Monitoring Center of the United Nations Environment Program (UNEP) published in mid-February 2024, migratory animals are currently facing risks all over the world. This is the first report on this issue, which focuses on the 1,189 species listed in the Appendices of the United Nations Convention on the Conservation of Migratory Species of Wild Animals (CMS). Overall, more than one in five species listed in the Appendices of CMS are threatened with extinction and a significant proportion (44%) have population trends that are decreasing. When looking at Appendices alone, 82% of species in Appendix I are threatened with extinction and 76% of species have a population trend of decline. Meanwhile, 18% of species in Appendix II are threatened globally, with nearly half (42%) showing a decreasing trend. The conservation status of fish species listed in CMS are of particular concern. Almost all (97%) of the fish species listed in CMS are threatened with extinction, and on average the number of fish monitored has plummeted over the past 50 years.

Additionally, levels of extinction risk are rising across CMS-listed species as a whole. Between 1988 and 2020, 70 CMS species showed a deterioration in conservation status, substantially more than the 14



species that showed an improvement in conservation status. Extinction risk is also escalating across the wider group of migratory species not listed in CMS, with 399 migratory species globally threatened and near threatened (mainly birds and fish). These species require further scrutiny from the CMS Parties and Scientific Panels and may benefit from being listed in the CMS Appendix. A total of 179 species listed in Appendix II were identified as “very high” (52 species, 5%) and “high” (127 species, 13%) priority for further conservation measures.

## THREATS TO THE WORLD'S MIGRATORY SPECIES

Migratory species face a multitude of pressures, which are overwhelmingly caused by human activities. Due to their reliance on multiple geographically distinct areas, and their dependence on connectivity between these areas, migrants are more likely to be exposed to a diverse range of these threats, which can impact them at different stages of their migratory cycles. Here are the four main threats to the world's migratory species:

### *Overexploitation*

Overexploitation of natural resources is the primary cause of biodiversity loss in the world's oceans and the second most important driver of global biodiversity loss on land. Migratory species across the world are harvested, taken and traded for a variety of reasons, including consumption as food (i.e. wild meat), transformation into products such as clothing and handicrafts, use as pets, belief-based use and sport hunting. According to the IUCN Red List, “overexploitation” is one of the main threats facing migratory species, and affects 70% of CMS-listed species. Nearly three quarters of all CMS-listed terrestrial mammals (70%) are targeted by hunters, largely to supply domestic demand for wild meat [4]. Hunting for food, sport and other purposes is also a pervasive threat to the many migratory birds that use the East Asian-Australasian flyway or migrate between Africa and Europe. While migratory birds often benefit from some legal protection, many are subject to pressure from illegal taking. Between 11 and 36 million birds are estimated to be illegally killed or taken annually in the Mediterranean region [2]. Early indications suggest that the scale of unsustainable and illegal take may be even higher in Southeast Asia [3].

### *Habitat loss, degradation and fragmentation*

Habitat loss, degradation and fragmentation is among the main drivers of global biodiversity loss in terrestrial and freshwater ecosystems. The Serengeti-Mara ecosystem in the United Republic of Tanzania and Kenya is a prime example, experiencing significant pressure from the expansion of agriculture, settlements, roads and fences. This affects the quality and availability of habitat for some of the world's largest free-ranging populations of migratory ungulates, including blue wildebeest and plains zebra, which support populations

of CMS-listed apex predators such as lion and African wild dog. Similarly, the modification and fragmentation of European rivers, through the construction of dams and other structures, has drastically reduced the suitability of these freshwater habitats for migrating European Eels [10].

Habitat destruction and degradation is also a significant driver of biodiversity loss in marine ecosystems, where the loss of habitats like seagrass meadows as a result of climate change, pollution, land reclamation and port expansion have triggered population declines in species like Dugongs that rely on seagrass as a food source [9,6]. As migratory species must be able to move between sites, they are particularly vulnerable to the loss of ecological connectivity that often results from habitat destruction and degradation.

There is therefore an urgent need to maintain, enhance and restore ecological connectivity to sustain the mobility of migratory populations between locations across their entire range and life cycle.

### *Climate changes*

The impact of climate change is already being felt by many migratory species, and the role of climate change as a direct threat to biodiversity is expected to increase considerably in the coming decades [7]. In addition to increasing temperatures, climate change will result in changes in precipitation, extreme weather, sea level rise and ocean acidification, all of which have the potential to dramatically change habitats and their species composition [11]. While some migratory species may be able to adapt to climatic changes, many will not be able to do so, particularly where its cascading effects could see the degradation and loss of key habitats. Importantly, climate change may also act as an amplifier of other threats, such as habitat loss, pollution, and overexploitation [7].

### *Environmental pollution*

Pollution is a key driver of recent biodiversity loss worldwide and includes contamination of the environment with artificial light, anthropogenic noise, plastic and chemicals [13,8]. According to the IUCN Red List, pollution is a threat to 276 CMS-listed species (43% of those with threats documented). Pollution can cause mortality directly, through toxic effects on individuals, or indirectly, by reducing food availability and degrading habitat



quality. It can also adversely affect reproductive and physiological performance and natural behaviours, including migratory behaviour. Given their reliance on multiple spatially separated habitats, migratory species may be more likely to encounter a diverse range of pollutants such as plastic pollution. Plastic pollution is not only widespread in marine environments but also affects terrestrial and freshwater species such as Indian elephants and Irrawaddy dolphins. Plastic affects wildlife primarily through entanglement (whereby animals become ensnared in items like bags or nets) or through the ingestion of small plastic materials [5].

## RECOMMENDATIONS ON PRIORITY ACTIONS

The Convention on Migratory Species provides a global platform for international cooperation and the active participation of governments, communities and all other stakeholders in addressing the myriad of challenges that migratory species face. With the recently renewed global commitments established to address threats to biodiversity through the Kunming-Montreal Global Biodiversity Framework and with the adoption of the new strategy envisaged predicted at CMS COP14, collective efforts to deliver on these commitments and deliver on ambitions for migratory species are essential.

### **Protect, connect and restore habitats**

Identify key sites for migratory species along their entire migratory pathways. Accordingly, it is necessary to identify important habitats and sites for migratory species such as Key Biodiversity Areas (KBAs) which identify nearly 10,000 important sites for CMS-listed species, but there are taxonomic and geographic gaps in the existing site network, particularly for migratory terrestrial mammals, aquatic mammals and fish.

Increase the coverage of KBAs and other critical habitats by protected and conserved areas. In line with global targets to expand the network of protected and conserved areas to over 30% by 2030, prioritizing those sites that are important for biodiversity is vital to ensure successful outcomes for nature. Currently more than half of the area of KBA sites identified as being important for CMS-listed species is not covered by protected or conserved areas, indicating there are clear gaps and more needs to be done.

Enhance the management effectiveness of protected and conserved areas. This includes ensuring sufficient resources are put into the management of protected and conserved areas to maximize the benefits for biodiversity. Given the scale of the threats to migratory species, improving the ecological condition of protected and conserved areas is essential to maintain environments for many species. To ensure the management needs of migratory species are taken into account, key priorities for migratory species should be integrated into management plans for these areas. More broadly, it is important that key conservation priorities for migratory species are also integrated into National

Biodiversity Strategies and Action Plans (NBSAPs).

Establish, support and expand regular monitoring of important sites for migratory species, and of populations of migratory species at these sites, following standardized protocols. This is essential to identify the threats taking place and their impacts on species and ecosystems. These efforts are needed to prioritize conservation actions, evaluate the effectiveness of management interventions and help to pinpoint any drivers of population change in CMS-listed species.

Follow through on ecosystem restoration commitments, including those linked to the UN Decade on Ecosystem Restoration and Target 2 of the Kunming - Montreal Global Biodiversity Framework to ensure that at least 30% of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration by 2030. To support these efforts, develop and implement national restoration plans focussed on restoring and maintaining important habitats for migratory species.

Minimize the negative impacts of infrastructure projects on flyways, swimways and migration pathways for migratory species, with avoidance of impacts on critical sites for migratory species as a primary aim. Projects should be carefully planned from the outset in accordance with the relevant Environmental Impact Assessment and Strategic Environmental Assessment guidelines.

### **Overcome overexploitation**

Ensure that national legislation fully and effectively protects CMS Appendix I-listed species from take, including by closely regulating any exceptions to the general prohibition of take and by participating in the CMS National Legislation Programme.

Assess the cumulative impact of harvest pressure on migratory species at the flyway and population level and use this information to manage levels of take. These aims could be supported by increasing efforts to collate data on both legal and illegal take at national and international scales.

Strengthen and expand collaborative international efforts to tackle illegal and unsustainable take, focussing on the main drivers of taking and on geographical areas identified as hotspots for illegal killing. Such initiatives could be based on the Task Forces established to tackle the illegal



killing of migratory birds. At the national level, multistakeholder action plans should be developed to agree priorities and foster collaboration to tackle this issue.

#### **Reduce the harmful effects of environmental pollution**

Promote widespread adoption of light pollution reduction strategies, including those outlined in the Light Pollution Guidelines for Wildlife endorsed by CMS Parties, focussing in particular on brightly lit areas that overlap with crucial habitat or migration corridors.

Restrict the emission of underwater noise in sensitive areas for marine species, including by making use of the CMS Family Guidelines on Environmental Impact Assessments for Marine Noise-generating Activities, and through the application of quieting technologies in key marine industries.

Addressing plastic pollution on land, at sea and in freshwater ecosystems by eliminating problematic and unnecessary plastics and by reducing the unnecessary use and production of plastics through regulations, incentives and practices.

#### **Address the root causes and cross-cutting impacts of climate change**

Deliver on international commitments to address climate change, including on pledges to reduce greenhouse gas emissions and enhance the removal of these gases from the atmosphere by maintaining and increasing carbon stocks in vegetation and soils. Carbon stocks should be managed in ways that align with internationally agreed biodiversity conservation goals.

Protect a network of sites important for future migratory species against the likely consequences of climate change by ensuring that there is sufficient connectivity between sites to facilitate dispersal and range shifts, and that this connectivity will persist in the face of projected climate impacts. Efforts to review the adequacy of the current network – and to expand this network – should fully integrate these projected impacts to ensure resilience.

Help migratory species adapt to a changing climate through targeted ecosystem restoration efforts, designed to improve habitat quality and connectivity and reduce the impact of extreme weather events, such as drought and thermal stress, by facilitating dispersal and range shifts ■

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