UN environment programme CMS

Fact Sheet

Convention on the Conservation of Migratory Species of Wild Animals

MIGRATORY SPECIES AND CLIMATE CHANGE

The Siberian Crane and its habitat are threatened by the effects of climate change – Photo: © Canva.com

Climate Change: A Severe Threat to Migratory Species

Climate change is already having major impacts on migratory species and the phenomenon of animal migration. Some of the most immediate threats to migratory species caused by increased temperatures include the loss of vital habitat as sea ice and tundra permafrost melts, as well as the collapse of food webs in the oceans linked to changing zooplankton abundance. Changes in precipitation will impact migratory species, for example, through a reduction of wetland habitats required for breeding and feeding. A recent study[1] predicts that by 2050, as much as 87% of Critical Sites in Africa will be rendered less suitable for migratory waterbirds due to the impacts of climate change. Increased variation in rainfall will also affect the breeding success of species.

Phenological shifts will have implications of potential mismatch between species migration and optimal food abundance as well as suitable weather conditions. With climate change, storm frequency and intensity, and extremes in precipitation causing flooding and drought are expected to increase. For example, early arrival of White Storks at breeding grounds may increase hatchling mortality due to extreme weather events. The migration, hibernation and reproduction of Monarch Butterflies may be significantly affected due to their high sensitivity to temperature changes. Projected changes in ocean circulations will affect food distribution and abundance patterns, making predictable migrations difficult for many species which depend on these currents for blooms of prey, or rely on them as a mechanism to aid migration. Ocean acidification, caused by CO_2 absorption by seawater, is known to inhibit the viability of krill eggs, threatening in turn the survival of the Blue Whale, as these ocean giants feed on the small crustaceans.

WHAT ARE MIGRATORY SPECIES AND WHY ARE THEY A GLOBAL PRIORITY?

From antelopes to fish, from whales to elephants, from bats to birds and even butterflies, many different groups of animals migrate, sometimes covering exceptional distances across the planet. They constitute a significant component of biodiversity in general, and are found in a wide variety of ecological systems in every part of the world. Their migratory nature gives them a special role as ecological keystone species and indicators of ecological change. Migration is a key adaptation to seasonal changes, and thus it is not surprising that climate change is having an impact on both migratory species and their habitats.

Migratory Species: Contributing to Climate Change Mitigation, Adaptation and Resilience

Conservation of migratory species and their habitats is also important for climate change mitigation, adaptation and resilience. For instance, seagrass meadows help to mitigate climate change by capturing carbon in the mud at rates comparable to that of tropical rainforests. Green Turtles and Dugongs contribute to climate change mitigation in keeping seagrass meadows healthy by shortening the plants and thereby preventing them from suffocating themselves.

A new study[2] points to the role of large wild animals in climate change mitigation and adaptation. Terrestrial herbivores such as elephants and Giraffes help build more complex and more resilient ecosystems by dispersing seeds, clearing vegetation and fertilising the soil, increasing carbon stocks in the ground and helping to reduce CO_2 in the atmosphere. By grazing and trampling vegetation, large animals in polar regions create open habitats which reveal snow-covered areas that in turn reflect more solar radiation into the atmosphere, cooling the Earth's surface.

MIGRATORY SPECIES AND CLIMATE CHANGE

Implications of climate change for new species conservation strategies

As climatic changes are more apparent, and the rate of change potentially increases, habitats and species ranges will shift significantly, both within and across national borders. The current protected area network may not match critical sites in future as it does today. Dynamic management techniques as well as coordination and cooperation among range states is essential to ensure the long-term availability of sufficient suitable habitats for species shifting their range.

CMS Work on Addressing Climate Change

The Convention on Migratory Species (CMS) provides opportunities to develop strategies at the international level and foster cooperation between countries to tackle the impacts of climate change on specific species. A Programme of Work on Climate Change and Migratory Species, established at CMS COP11 (2014) will soon conclude and a new one is expected to be considered at COP14 in 2023.

One of the top priorities for CMS is maintaining and restoring ecological connectivity. An improvement of the ecological continuum between natural habitats is necessary in order to mitigate the effect of climate change and is crucial for climate change adaption of wild animal species, and their survival.

CMS COP14

Uzbekistan will host the 14th meeting of the Conference of the Parties (COP14) to CMS in October 2023. Climate change issues are of particular importance for the Central Asian region, which is a habitat for some rare and endemic species such as the saiga antelope, snow leopard and Bukhara deer, and is a migratory route for flamingos, Siberian Crane, vulture and many other migratory wild birds. Severe droughts in recent years have become cause of concern, highlighting changing weather patterns in the region as well as the need to tackle water supply vulnerabilities. Desertification and climate change, both individually and in combination, are expected to lower ecosystem health, including losses in biodiversity.

Another example of CMS work focuses on the energy transition, with the CMS Energy Task Force, a multi-stakeholder platform that aims at avoiding and minimising the negative impacts of renewable energy developments such as wind farms, offshore installations and their associated infrastructures on migratory species.

Photos: Snow Leopard © Canva.com; Blue Whale © Canva.com

About CMS

The Convention on the Conservation of Migratory Species of Wild Animals (CMS), also known as the Bonn Convention, works for the conservation of a wide array of endangered migratory animals worldwide through negotiation and implementation of agreements and species action plans. It has 133 Parties (as of 1 March 2022).

CMS engages all relevant stakeholders in addressing threats to migratory species in concert with all other aspects of wildlife conservation and management.

CMS Instruments

Animals receive protection under CMS through listing on its two Appendices, through global or regional agreements and through action plans.

[1] https://onlinelibrary.wiley.com/doi/epdf/10.1111/gcb.15961
[2] https://doi.org/10.1016/j.cub.2022.01.041

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