



CLIMATE CHANGE AND MIGRATORY SPECIES



1. Climate change is a global challenge for nature conservation as it impacts both species and ecosystems. Weather and seasonal changes continue to have considerable impact on migratory species and their conservation status. These species in many ways are more vulnerable than non-migratory species since they rely on multiple habitats and sites for breeding and feeding, and are exposed to climatic variations during their migration. For example, the Mediterranean Monk Seal needs isolated beaches to breed and raise its pups; stretches of sand that are increasingly rare as rising sea levels lead to receding coastlines. In the north Arctic, large areas of sea-ice crack have begun to melt earlier in the season than usually the case, leaving Polar bears that travel on the ice trapped on the open ocean, unable to return to land from their winter hunting grounds. Once rare in Europe during the winter, the European Bee-eater has ceased to migrate altogether and can now be found year-round in Germany. Many species are also changing the timing of significant events in their life cycles, such as breeding, in response to changes in climate. When water temperature increases, it affects the breeding time of species.
2. This temperature change also affects the gender of some species, such as certain turtles and fish since warmer water temperatures lead to greater female populations. This water temperature change also causes multiple diseases, as can be seen with the increase in tumors in Green Sea Turtles. Moreover, the range of invasive species is increasing and they are moving into areas where they have never been found before, affecting the balance of local ecosystems and challenging native species for habitat and resources.¹
3. Migratory species serve as invaluable indicators of the interdependence and linkages between ecosystems and ecological health. The major challenges of climate change in terms of migratory species include extensive migration and ecosystems reorganization occurring in landscapes that were not as fragmented nor as degraded as those found today. Therefore, the adaptive capacity of migratory species and the ecosystems they rely on may be limited, and underscores the need for managing existing protected areas or other habitats of high biological importance in dynamic ways.²
4. Moreover, limited research and monitoring of the impact of climate change on migratory species has been undertaken. Ongoing developments and adaptations among migratory species need to be observed and measured. The distribution and occurrence of populations should be surveyed and migratory and reproductive behavior of species should be recorded and observed.

¹ Migratory Species and Climate Change: Impacts of a Changing Environment on Wild Animals. Published by UNEP and the Secretariat of CMS. 2006. Bonn. www.cms.int

² Millennium Ecosystem Assessment. 2005. Ecosystems and Human Well-being: Biodiversity Synthesis. World Resources Institute, Washington, D.C.

5. For the implementation of appropriate conservation measures, it is important to develop regional scenarios for the future. Such scenarios should be based on today's knowledge of the ecology and habitat preference of migratory species, as well as the global climate and its variations. Linking to the programmes of the UN Framework Convention on Climate Change is also crucial, especially those focusing on research and systematic observation under Article 5 of the Convention.
6. The Convention on Migratory Species (CMS) provides a framework that will allow Parties to work together to help overcome the problems in relation to climate change that are likely to arise as a result of climate variations. Climate change issues were considered at the fifth Conference of the Parties of CMS which recognized that climate change may significantly affect the behavior, distribution and abundance of migratory species and may change the ecological character of their habitats. Since there are many conservation success stories from activities undertaken by Parties to CMS, its Agreements and Memoranda of Understanding, it may be prudent to integrate climate change considerations within CMS framework. Such integration will provide flexibility to address particular threats to migratory species. In particular, the sharing of information and expertise will be an important means of speeding up the responses of different countries to climate change issues. At its 8th Conference of Parties, CMS Scientific Council was requested to give climate change high priority in its future programme of activities. In addition, the 4th Meeting of Parties to the African-Eurasian Waterbird Agreement (under CMS) has adopted Resolution 4.14: *Effects of Climate Change on Migratory Waterbirds*, and instructed its Secretariat to assist in gathering and disseminating knowledge and expertise on climate related waterbird research at national and international levels.
7. To combat adverse effects of climate change and protect species habitats, nature conservation policies must support the work at the national and international levels to improve the use of renewable energy sources and to protect natural carbon dioxide sink such as swamps, bogs and forests. Forests naturally remove carbon dioxide from the atmosphere and release oxygen, forming a crucial part of the planet's biosphere. By preserving the habitat of migratory species and expanding carbon capturing forests, the impact of climate change will be mitigated and ideally reverse the trends which adversely affect migratory species. This could be achieved in the context of reducing emissions from deforestation and forest degradation (REDD), a policy mechanism under UNFCCC. To succeed in achieving sustainable emissions reductions from deforestation and forest degradation at a national level, each country has to identify and address the drivers of deforestation and forest degradation. It is also vital to consider policy approaches for achieving and encouraging emissions reductions, including promotion of forest conservation and protection of migratory species that rely on forests for their habitats and survival.
8. There is a need to promote both ecological connectivity and integrated land and water management outside protected areas, while reducing present threats to wildlife. Creating isolated protected areas is not enough. It is important to establish networks of protected areas of land and sea under all kinds of use to help species respond to changing climate, as well as to identify the corridors that species will likely use and secure them. Such actions can also help link with the work programme of CMS with that of CBD in achieving the 2010 Target of reducing biodiversity loss.
9. Investing in ecological restoration should not be forgotten. A deliberate effort to reintroduce extirpated species, and to build wetlands where they have been wiped out will be required. Adequate information on migratory stopover sites like wetlands need to be collated so as to identify coherent migratory networks and target site conservation action. Regional and national action plans on ecological restoration should be developed and implemented with specific focus on migratory species and their migratory issues.
10. In sum, commitment to long-term monitoring schemes will be required to detect the long-term impacts of climate change and to assess the abilities of different species to adapt to it. Standardized data collection on migratory stopover sites will be necessary if monitoring is to be effective. A unified system of alerts to identify future problems and thresholds to target conservation action will equally be vital. A Global Alert and Monitoring System (GMAS) for CMS may help in dealing with this.