



**CONVENTION ON
MIGRATORY
SPECIES**

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Agenda Item 20

ATLAS ON ANIMAL MIGRATION

(Prepared by the Secretariat)

Summary:

This document summarizes the process towards the development of an atlas on animal migration, an activity that is included in the CMS Programme of work 2020-2023.

The Conference of the Parties is recommended to take note of the progress in the development of the Atlas and adopt the draft decisions.

ATLAS ON ANIMAL MIGRATION

Background

1. The Conference of the Parties at its eleventh meeting (COP11, 2014) included the development of an atlas on animal migration as an activity to pursue within the CMS Programme of Work for 2015-2017. The production of the atlas was foreseen as a long-term initiative, expected to be continued in future triennia and to be implemented through a modular approach.
2. A mandate for continued work on an atlas was included in the CMS Programmes of Work for the intersessional periods between COP12 and COP13, and between COP13 and COP14. This document summarizes progress in the development of four modules.

Atlas for migratory mammals in the Central Asian region

3. Resolution 11.24 *The Central Asian Mammals Initiative* (CAMI) endorsed the concept of CAMI and adopted a comprehensive Programme of Work (PoW) annexed to the Resolution. It also adopted *Guidelines for Addressing the Impact of Linear Infrastructure on Large Migratory Mammals in Central Asia*.
4. In the context of the implementation of the PoW, a Central Asian Mammals Migration and Linear Infrastructure Atlas was developed, with funding from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of Germany (BMU) and the Swiss Government and under the lead of the Wildlife Conservation Society (WCS). The atlas aimed at mapping the distribution and movement corridors of migratory mammals, and threats from linear infrastructure, such as railways, roads, pipelines, and border fences, across the entire Central Asian region. It features the distribution of ten of the most affected species in ten countries as well as constructed and planned infrastructure. The atlas was finalized in 2019 and published as [CMS Technical Series Publication No. 41](#) in 2019.
5. The atlas is currently being updated within the framework of the Central Asian Mammals and Climate Adaptation (CAMCA) project, funded by the International Climate Initiative (IKI) of the German Government. The updated CAMI Atlas is expected to be launched in 2024 as an online, interactive web tool to facilitate greater accessibility and usability for stakeholders and will partially integrate data on climate change effects on certain migratory species in the region.

Atlas of bird migration in the Eurasian-African region

6. Development of this module, funded by the Ministry of the Environment and Protection of Land and Sea of the Government of Italy and undertaken by the European Union for Bird Ringing (EURING) in collaboration with the [Max Planck Institute of Animal Behavior](#) under an agreement with the CMS Secretariat, has been completed. The Atlas was launched at an event at the Museum of Migration on the Italian island of Ventotene in May 2022 (a press release concerning the launch can be accessed [here](#)). The interactive Atlas is publicly accessible at this website [Bird Migration Atlas](#).
7. Researchers from 10 different institutions and data gathered by over 50 different organizations contributed to the Atlas. A major accomplishment of the Atlas is to have collated, analyzed, and synthesized bird ringing data collected over more than 100 years on 300 species. In addition, for over 100 of these species, the online mapping tool

overlays movement patterns identified through bird ringing with tracks obtained through satellite transmitters, GPS-GSM tags or geo-locators. Together, they provide the most complete information available on the migration routes of these species.

8. Another main feature of the Atlas is the four research modules addressing different aspects of bird migration and relationships between birds and people. All are highly relevant to international and flyway scale bird conservation. These research modules address the following topics:
 - [Historical changes in migration patterns](#)
 - [Intentional killing of birds by man](#)
 - [Migration seasons of hunted species](#)
 - [Migratory connectivity within the European African migration system](#)

Marine Turtle Breeding and Migration Atlas "TurtleNet"

9. This online interactive atlas developed by Queensland's Department of Environment and Science (DES) in collaboration with CMS, brings together decades of Australian and global data on nesting, courtship, feeding and migration routes of marine turtles. It was launched on 16 June 2021 on the occasion of World Sea Turtle Day 2021. It can be accessed [here](#). Funding aimed at further developing the Atlas, notably increasing the number of migration animations, has been secured from the Government of Australia. The Secretariat is liaising with DES on the realization of the project.

Global Initiative on Ungulate Migration (GIUM)

10. The CMS Secretariat is working in partnership with an international team of scientists and conservationists to create the first-ever global atlas of ungulate (hooved mammal) migrations. The detailed maps of the seasonal movements of herds worldwide will help governments, indigenous people and local communities, planners, and wildlife managers to identify current and future threats to migrations, and advance conservation measures to sustain them in the face of an expanding human footprint. The Global Initiative on Ungulate Migration (GIUM) was launched with the publication of a commentary titled "Mapping out a future for ungulate migrations," in the May 7, 2021 issue of the journal *Science*¹. In July 2023, the GIUM Science Advisory Board organized the inaugural GIUM meeting in Jackson, Wyoming, USA in which the CMS Secretariat participated, bringing together over 60 experts from around the world to discuss how the Global Atlas of Ungulate Migration can be expanded to additional regions and species, what is needed to maintain it as a useable tool for policy-makers, and how it can be promoted among policy-makers, financiers and other stakeholders of infrastructure development.

Discussion and analysis

11. The need for mapping animal migration has become all the more relevant. Identifying important sites for migratory species and understanding migration patterns will directly contribute to achievement of the objectives of the Convention, as well as to other global policy priorities including the Kunming-Montreal Global Biodiversity Framework. New research on migratory species and climate change, presented as an information document for the ScC-SC6, further underscores the need to understand migratory pathways and how they may be shifting.

¹ Matthew J. Kauffman, et al., *Mapping out a future for ungulate migrations*. *Science* 372, 566-569 (2021).DOI: [10.1126/science.abf0998](https://doi.org/10.1126/science.abf0998)

12. The mandate for the development of an atlas in the past was provided through the Programme of Work adopted in conjunction with the budget. However, it is proposed, in line with what is done with other workstreams, to have it mandated through a COP Decision. A draft Decision is provided in Annex 1 for the consideration of COP14.

Recommended actions

13. The Conference of the Parties is recommended to:
 - a) take note of this report;
 - b) adopt the decisions contained in Annex 1 to this document.

ANNEX 1**DRAFT DECISIONS
ATLAS ON ANIMAL MIGRATION*****Directed to Parties***

14.AA Parties are encouraged to:

- a) make use, as appropriate, of the numerous modules of the atlas on animal migration prepared thus far in their policies, decision making and management, and in implementing the provisions, Resolutions and Decisions of the Convention on Migratory Species;
- b) report to the Conference of Parties at its 15th meeting on the experience with using the modules of the atlas.

Directed to the Secretariat

14.BB The Secretariat should, subject to the availability of external resources, and in cooperation with the Scientific Council:

- a) further develop the modules currently underway;
- b) promote the knowledge and use of existing modules through appropriate means, such as webinars;
- c) consider the need for any update of existing modules, and improvement of their usability;
- d) explore options for the development of additional modules, in consultation with the Scientific Council; and
- e) explore options for improving the availability of the various modules of the atlas, e.g., through a global database.