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Moose: Biebrza River Valley, Poland

Migration Description



Moose living in Poland inhabit the southern edge of the species' range in Europe. The Biebrza marshes, including Biebrza National Park, are one of the most important moose habitats in Poland. This area played a crucial role in the species' recovery during the country's 20-year ban on moose hunting, which was instituted following a population collapse from overhunting in the 1990s. Moose have since rebounded and are now a great attraction in the area. The varied habitats and forage availability in the Biebrza region drive moose space use and seasonal migration patterns. Moose migrate between large patches of wetlands, which provide preferable food resources in summer, and patches of coniferous forest that provide forage in winter. The migration distances are relatively short, and individual moose may spend several days to several weeks moving between seasonal ranges. In Biebrza, 65% of individuals were classified as migratory, 16% as resident, and 19% as ambiguous. Migration routes are typically specific to the individual and may vary from year to year.

Threats to Migration

Climate change and milder winters appear to have a profound effect on the migratory patterns of ungulates, including moose, potentially altering behavior and habitat use. Climate change may also lead to less synchronization and predictability of observed movement patterns. In Biebrza, moose cross busy roads and railways during migration, which often leads to car accidents. The planned development of road infrastructure crossing the marshlands in the area could create a significant barrier to migration and contribute to increasing wildlife-vehicle collisions. Hunters and foresters are increasingly calling for moose hunting to be reinstated in order to prevent damage to tree stands and farmland caused by the growing moose population. There is also rising competition with red deer and roe deer for food resources, particularly during the winter season. All of these factors could affect moose space use and habitats, and disrupt migration.

Local Population Facts

Migration

Seasonal  
Short 9.2 km (avg.)

Threats

 Climate change	 Energy dev.	 Urban sprawl	 Linear barriers
 Agriculture	 Livestock	 Illegal killing	 Other

Species Facts

Common name: Moose

Species name: *Alces alces*

Range: Forests and mosaic habitats of Central and Northern Europe

Diet: Browser

Global population: 440,000 in Europe

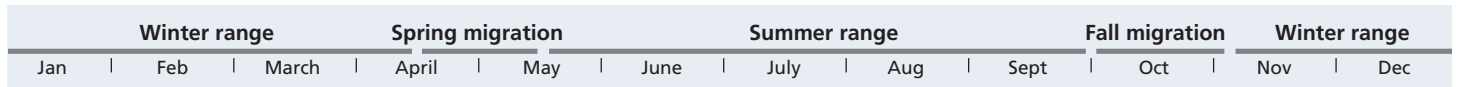
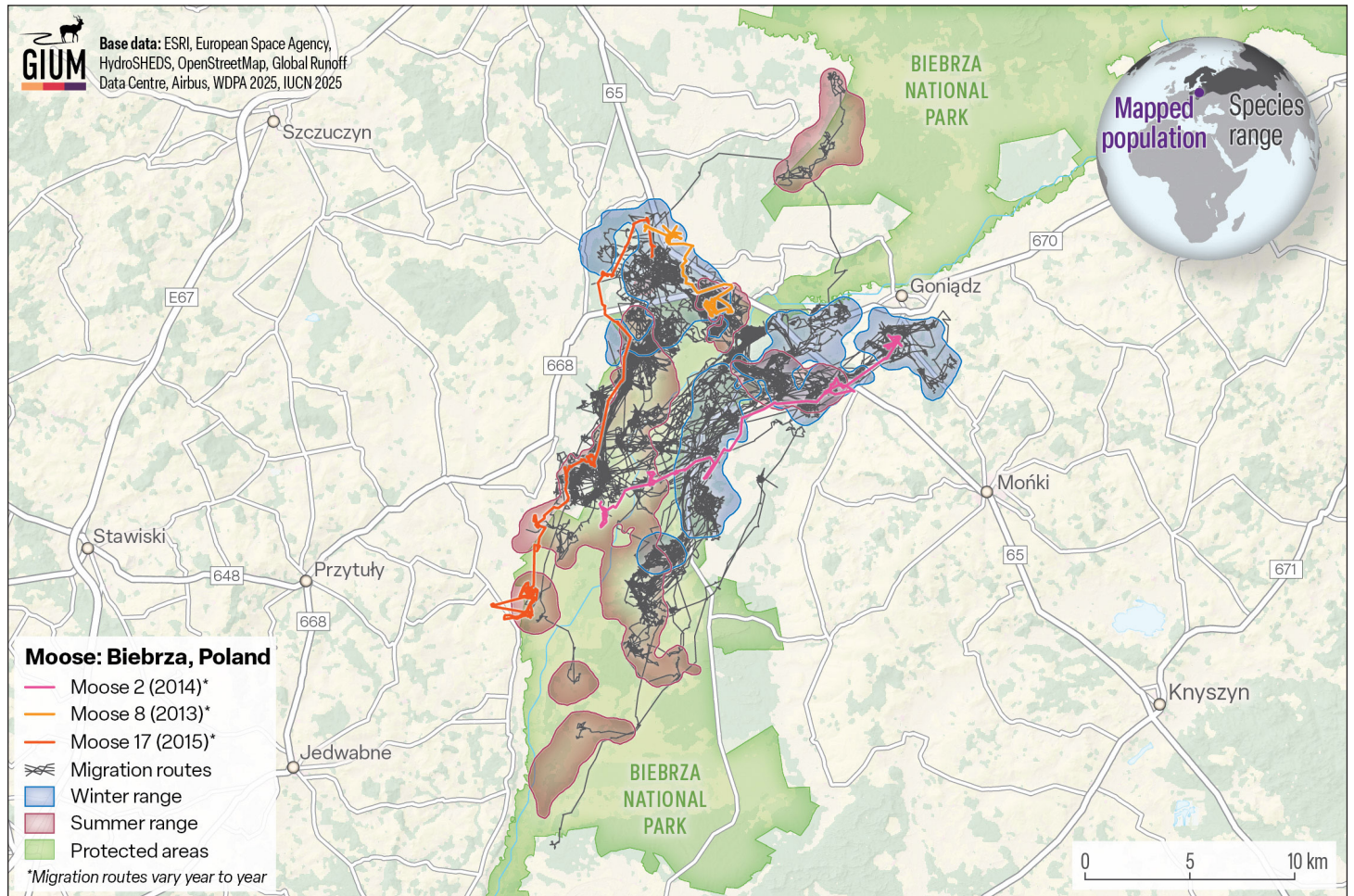
IUCN Conservation Status

LC Least concern

CMS Status

Not listed

Moose Migration



Study Information

Sample size

22 individuals

Relocation frequency

~1 hour

Project duration

5 years between 2012–2016

Data Analysis

Delineation of migration periods

Net squared displacement to delineate migration between seasonal ranges

Models derived from

Kernel densities for summer and winter ranges

Route Summary

Migration start and end date (median)

- Spring: April 19–May 09
- Fall: October 03–November 07

Average number of days migrating

- Spring: 16 days
- Fall: 38 days

Migration route length

- Min: 2.9 km
- Mean: 9.2 km
- Max: 20.1 km

Data Providers

Data was collected by Mirosław Ratkiewicz with the University of Białystok Faculty of Biology, and Rafał Kowalczyk with the Mammal Research Institute, Polish Academy of Sciences, Poland through the Polish Ministry of Science and Higher Education grant no NN3042809940.

In partnership with:



Mammal Research Institute
Polish Academy of Sciences
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Ministry of Science
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The Convention on the Conservation of Migratory Species of Wild Animals (CMS), also known as the Bonn Convention, is an environmental treaty of the United Nations that provides a global platform for the conservation and sustainable use of terrestrial, aquatic and avian migratory animals and their habitats.



The Global Initiative on Ungulate Migration (GIUM) was created in 2020 to work collaboratively to: 1) create a Global Atlas of Ungulate Migration using tracking data and expert knowledge; and 2) stimulate research on drivers, mechanisms, threats and conservation solutions common to ungulate migration worldwide.



View and Download
Map Data from the
GIUM Migration Atlas

Kowalczyk, R., Borowik, T., Ratkiewicz, M. 2025. Moose: Biebrza River Valley, Poland. Global Initiative on Ungulate Migration, editors. *Atlas of Ungulate Migration*. Convention on the Conservation of Migratory Species of Wild Animals.