Global Initiative on Ungulate Migration

FACT SHEET

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European Bison: Białowieża, Poland

Migration Description

The European bison is the largest terrestrial mammal in Europe. After going extinct in the wild at the beginning of the 20th century due to overhunting, the species was slowly restored using captive survivors. Bison were first reintroduced to the wild in the Białowieża Forest in 1952. Today, 870 bison inhabit the Polish part of the forest, which extends into Belarus. Increasing evidence shows that the European bison is adapted to more open habitats but historically was confined to the forests as a refuge, mainly due to intensifying human pressure. Still today, bison are mainly reintroduced and managed in forested landscapes. In the Białowieża Forest, bison aren't able to find sufficient forage in the winter, so managers provide supplementary feed (mostly hay) at fixed locations to prevent them from migrating out of the forest. Some herds spend the winter around the feeding sites and migrate to summer ranges within the forest in spring. However, around 50% of the total European bison population in the forest migrates seasonally to surrounding farmland to feed on winter crops such as rapeseed and cereals, as well as hay meadows. These migrations are therefore strongly influenced by human activity, both due to the bison's reintroduction to the forest, which offers little forage during the long winters, and the attraction of agricultural crops as an alternate food source for the animals.

Threats to Migration

Bison cross busy roads during migration, leading to accidents that result in animal injuries and death. Some bison have drowned in the drainage ditches that run through the farmlands and open areas. Human development and infrastructure, particularly linear barriers such as fences on the edges of forested areas, may further disrupt migration and prevent bison from establishing new migratory routes in this landscape. Climate change and associated shifts in habitat structure and food availability may also impact the range, direction, and nature of migrations. Even though the state compensates farmers for crop losses, the seasonal migrations of European bison to farmland lead to conflicts, and there are now discussions around instituting culls to maintain low bison numbers. Some farmers regularly haze bison away from their winter ranges, disturbing their behavior and increasing their energy expenditure and migratory range. The increasing pressure from tourists and photographers also disrupts bison movements, given that the bison is a charismatic species and is becoming a major attraction in the area.

Local Population Facts

Migration

Seasonal

Short 9.0 km (avg.)

Threats

Climate change

Energy dev.

Urban sprawl

Linear barriers

Agriculture

Livestock

Illegal killing

Other

Species Facts

Common name: European Bison

Species name: *Bison bonasus*

Range: Forests and mosaic habitats of Central and Eastern Europe

Diet: Mixed-feeder herbivore

Global population: 9,000

IUCN Conservation Status

NT Near threatened

CMS Status

Not listed

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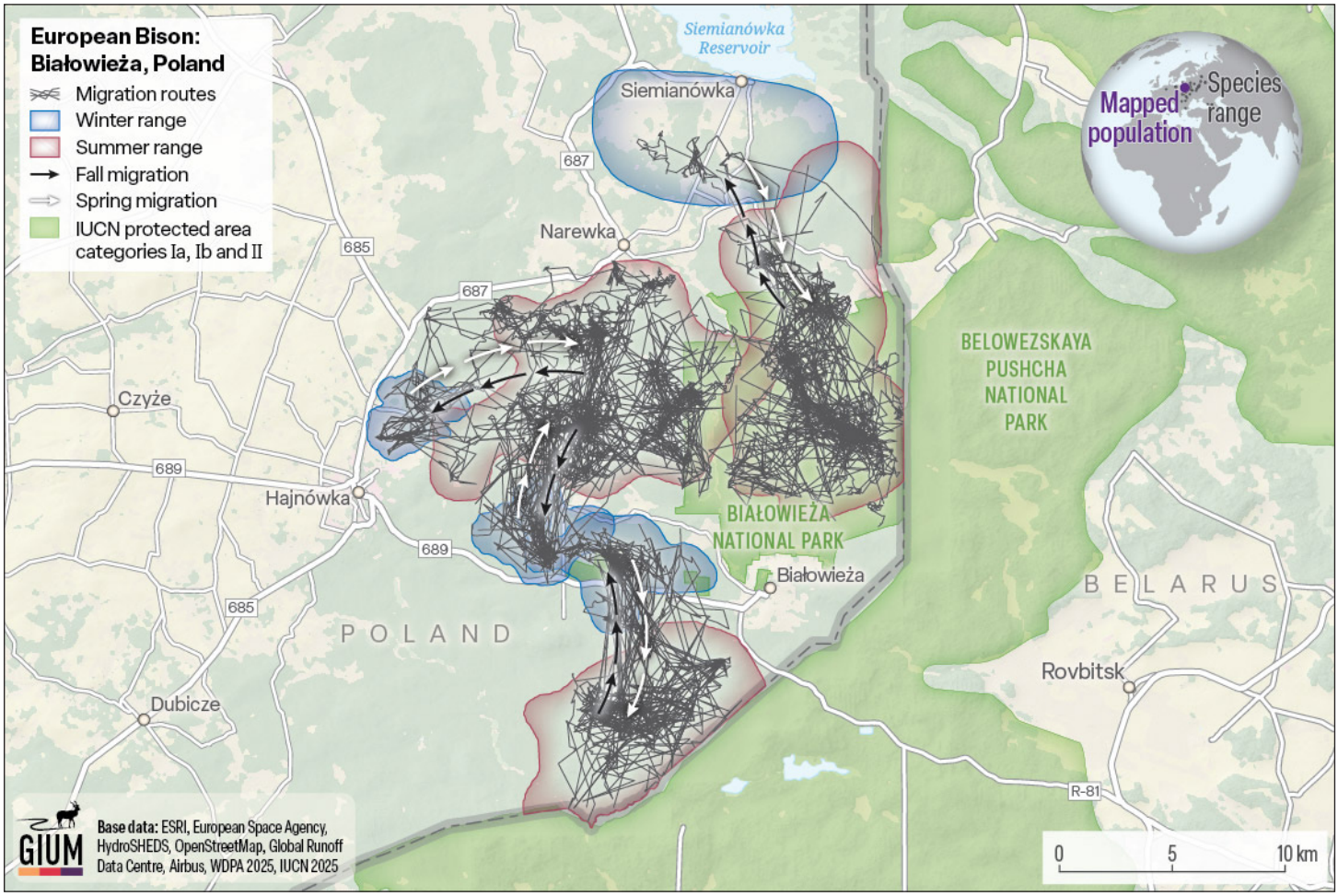
European Bison Migration



Winter range		Spring migration			Summer range				Fall migration		Winter range	
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	

Study Information

Sample size
32 individuals

Relocation frequency
1 to 4 hours

Project duration
9 years between 2005–2013

Data Analysis

Delineation of migration periods
Net squared displacement to delineate migration between seasonal ranges

Models derived from
Kernel densities to delineate winter and summer ranges; northernmost winter range modified based on data provider's knowledge

Route Summary

Migration start and end date (median)
- Spring: April 05–May 01
- Fall: October 02–October 15

Average number of days migrating
- Spring: 27 days
- Fall: 31 days

Migration route length
- Min: 5.7 km
- Mean: 9.0 km
- Max: 11.5 km

Data Providers

Data was collected by the Mammal Research Institute, Polish Academy of Sciences in Białowieża, Poland through the Polish Ministry of Science and Higher Education grant no NN304 25343.

In partnership with:

Mammal Research Institute
Polish Academy of Sciences
Białowieża

Ministry of Science and Higher Education
Republic of Poland

CMS www.cms.int

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.

GIUM www.cms.int/gium

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., and T. Borowik. 2025. European bison: Białowieża Forest, Poland. Global Initiative on Ungulate Migration, editors. *Atlas of Ungulate Migration.* Convention on the Conservation of Migratory Species of Wild Animals.