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Saiga Antelope: Ustyurt, Kazakhstan

Migration Description

Saiga antelope regularly undertake long-distance movements varying between wide ranging nomadic movements and also more directed seasonal migrations between summer and winter ranges. Saiga movements in the open and vast grasslands are driven by unpredictable, local precipitation events followed by vegetation green-up, often resulting in saiga shifting from directed movements to more wandering movements to track green up. In May, the saiga gather in large herds for calving, which under specific conditions become hotspots for disease outbreaks that plague the species. The Ustyurt population migrates generally between wintering areas in the south and distant summering areas in the north, sometimes several hundred kilometers away. This transboundary population spends most of the year in Kazakhstan, but historically has crossed the border into Uzbekistan for the winter to avoid harsh winter conditions.

Threats to Migration

Saiga face several major threats to their recovery and survival in Kazakhstan. International demand for saiga horn - believed to contain medicinal properties in some Asian countries - has led to large-scale illegal killing both in Ustyurt and the entire species' range. Though hunting saiga and trading their products, particularly male saiga's horns, are banned across the species' range, their sustained value in consumer countries continues

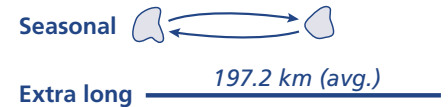
to encourage illegal killing. For instance, between 1993 and 2003 more than 90% of the global population was lost due to illegal killing, causing saiga to become Critically Endangered on the IUCN red list. Though the species has rebounded, leading to their reclassification as Near Threatened in 2023, illegal killing has been the main limiting factor for the Ustyurt population's growth.

Linear infrastructure poses another challenge, as saiga need vast and connected habitats for survival. Rapid economic development in the region is fueling the development of roads and railways, which can partially or totally block saiga movements (Fig. 1). Shy by nature and conditioned to avoid motorized vehicles due to poaching, saiga are reluctant to approach large constructions that fragment their range.

Periodic mass die-offs have led to population collapse. In 2015, researchers observed the largest mass die-off in recent history in central Kazakhstan, with over 200,000 animals dying literally overnight. A bacterium residing in the upper respiratory tract activated by particular weather conditions is the leading hypothesis explaining the phenomenon. The warm and wet conditions leading up to the die-off event may have facilitated the pathogenic development of the bacteria. As the climate in the region is predicted to get warmer and wetter, epidemics are a major concern for saiga management.

Local Population Facts

Migration



Threats



Species Facts

Common name: Saiga antelope

Species name: *Saiga tatarica*

Range: Central Asia, including Russia, Kazakhstan, Uzbekistan, and Mongolia (subspecies: *Saiga tatarica mongolicus*)

Diet: Herbivore

Global population: ~2 million

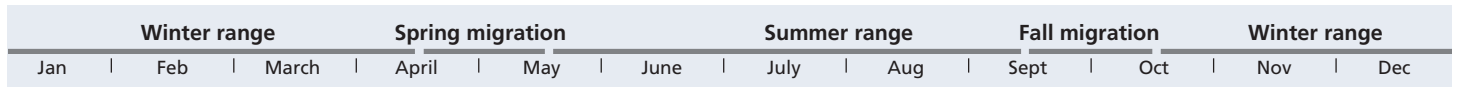
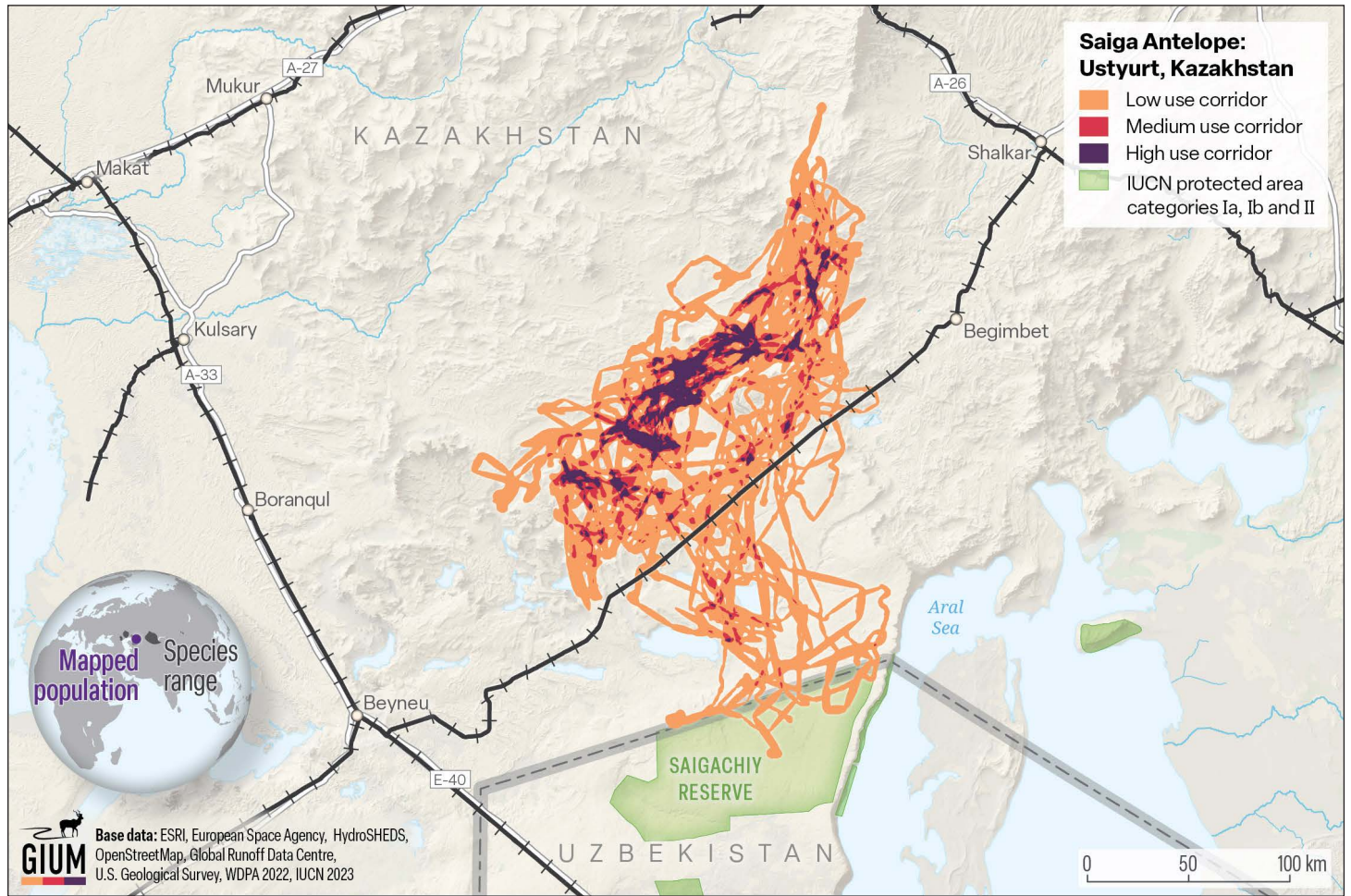
IUCN Conservation Status

NT Near threatened

CMS Status

Appendix II Migratory species conserved through agreements

Saiga Antelope Migration



Study Information

Sample size

17 individuals

Relocation frequency

12–24 hours

Project duration

7 years between 2012–2020

Data Analysis

Delineation of migration periods

Net squared displacement to delineate migration between winter and summer ranges

Models derived from

Brownian Bridge Movement Model (fixed motion variance 2000)

Route Summary

Migration start and end date (median)

- Spring: late March–late April
- Fall: mid-September–mid-November

Average number of days migrating

- Spring: 17.1 days, (± 11.5 days)
- Fall: 17.9 days, (± 14.3 days)

Migration route length

- Min: 73.9 km
- Mean: 197.2 km, (± 75.3 km)
- Max: 383.1 km

Data Providers

Data were collected and provided by Albert Salemgareyev and Steffen Zuther from the Altyn Dala Conservation Initiative implemented by the Association for the Conservation of Biodiversity of Kazakhstan together with the Committee of Forestry and Wildlife of the Ministry of Ecology and Natural Resources of Kazakhstan, supported by Fauna & Flora, Frankfurt Zoological Society and the Royal Society for the Protection of Birds.

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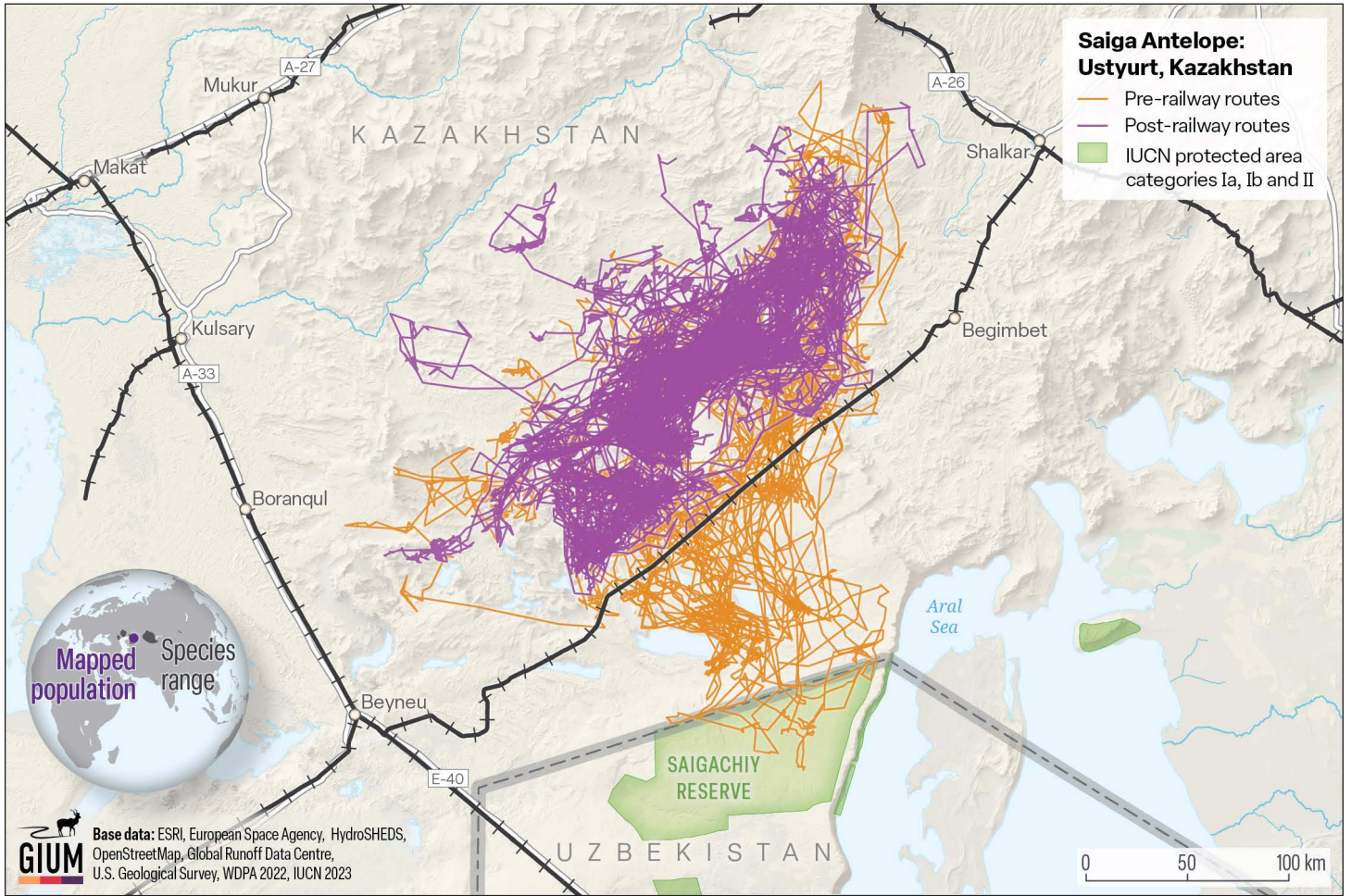


Figure 1: Saiga movements pre- and post-construction of the railway in 2015. Movement collected before and after the construction of a new railway in the Ustyurt population’s range shows the dramatic effect linear infrastructure can have on saiga’s ability to move freely across the extent of their migratory range. After construction, saigas no longer cross the border to Uzbekistan and access the protected area to the south, which provided critical winter habitat. More research is needed to determine if saiga can adapt to cross the railways successfully, which crossing structures they respond to, and how to effectively mitigate linear infrastructure’s impact on saiga migrations.

