



Wu et al. 2021, Ecosystem Health and Sustainability

# Tibetan Antelope: Hoh Xil, China

## Migration Description

The Tibetan antelope shows a unique migration strategy among the ungulates of the Tibetan Plateau. They are partially migratory: Some populations make long-distance migrations moving 300-400 km annually, while others remain resident year-round. Only the females migrate within the migratory populations, while most males remain on their collective winter range year-round. Tibetan antelope migration is synchronized with their reproduction cycle. Around mid-May, multiple populations from different wintering grounds depart to a shared summer range for breeding and return with their newborns in July and August. The Hoh Xil population spends the winter in the Sanjiangyuan National Park and then the females migrate to the shared summer breeding range in the Hoh Xil (or Kekexili) UNESCO World Heritage Site.

## Threats to Migration

Historically, illegal killing represented the primary threat to Tibetan antelope. Hunting has been banned entirely since the 1990s due to pressure from the Chinese government and the international community. Today, the two primary threats

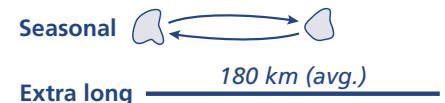
to the Tibetan antelope migration are habitat fragmentation and climate change.

On the Tibetan Plateau, linear infrastructure such as roads, railways, and fences contribute to landscape fragmentation. The Hoh Xil population is particularly impacted by these barriers, with their migration routes now bisected by the National Highway G109 and the Qinghai-Tibet Railway. Fences became popular on the Tibetan Plateau in the 1980s following a series of land reforms that transformed open, collectively-operated pastures, to fenced, individually-operated pastures.

With climate change, the Tibetan Plateau is getting warmer and wetter, directly impacting antelope habitat. Large floods in 2011 dramatically altered the Hoh Xil population's calving sites on the shores of the Zonag Lake. Heavy precipitation, increased glacier melting, and permafrost thawing caused flooding that formed deep-cutting riverbanks along the traditional antelope migration route, pushing the antelope away from their calving sites and restricting their access to water. Future changes to the seasonal habitats of Tibetan antelope brought about by climate change remain uncertain.

## Local Population Facts

### Migration



### Threats



## Species Facts

**Common name:** Tibetan antelope  
**Species name:** *Pantholops hodgsonii*  
**Range:** Tibetan plateau (China, India)  
**Diet:** Grazer (forbs, grasses, sedges)  
**Global population:** 100,000 – 200,000

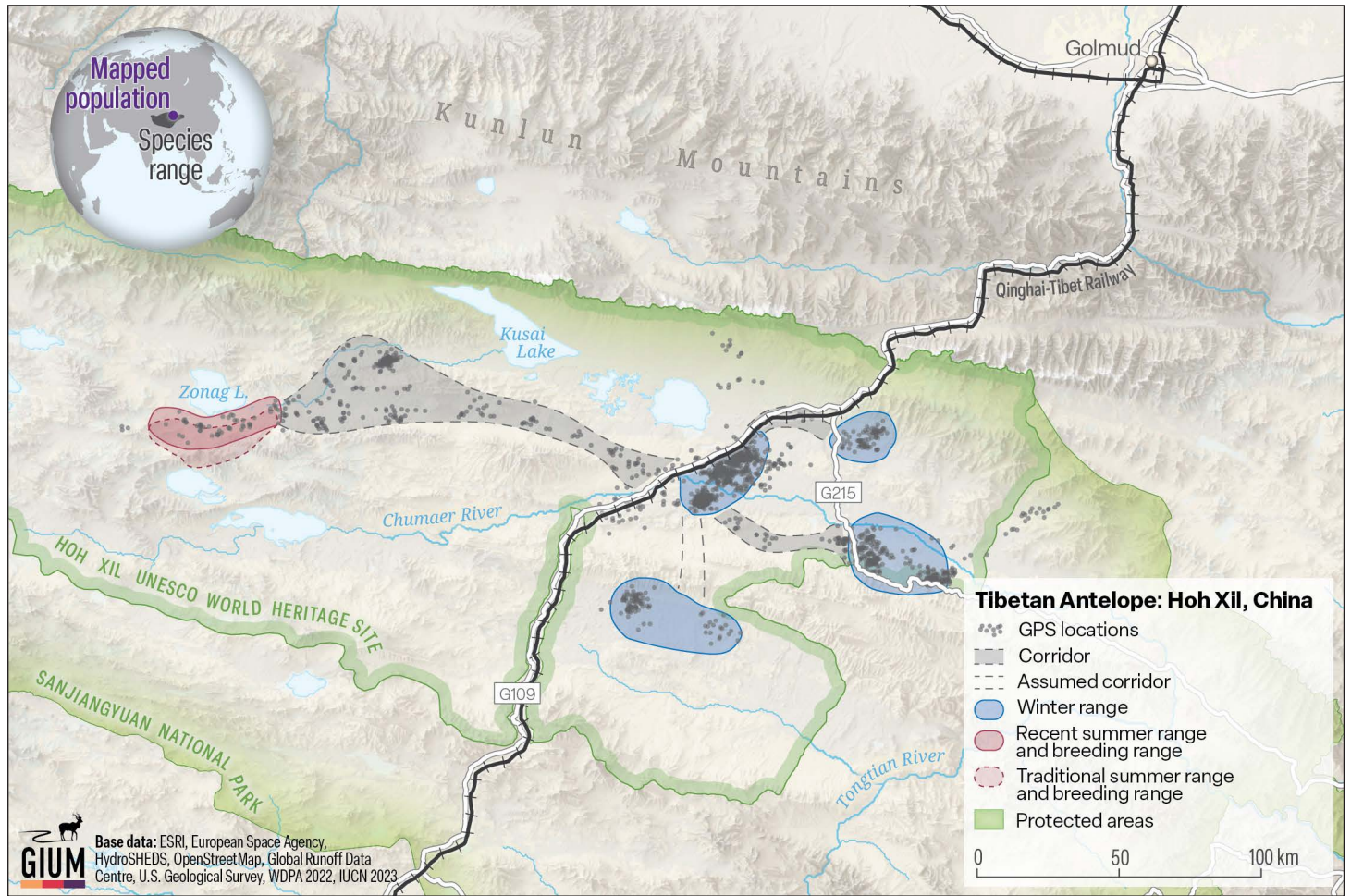
### IUCN Conservation Status

**NT** Near threatened

### CMS Status

Not listed

# Tibetan Antelope Migration



## Study Information

### Sample size

9 individuals

### Relocation frequency

On average 2.18 relocations per day

### Project duration

2007–2012

## Data Analysis

### Delineation of migration periods

Raw data visualization

### Models derived from

Direct plotting and expert knowledge

## Route Summary

### Migration timing

- Spring: May

- Fall: August

### Average number of days migrating

- Spring: 22±4 days

- Fall: 31±8 days

### Migration route length

- Min: 163 km

- Mean: 180 km

- Max: 273 km

## Data Providers

The tracking data were collected and processed through the efforts of Buho Hoshino from the Rakuno Gakuen University, Xiaomin Wu from Shaanxi Institute of Zoology, and Wenjing Xu from the Senckenberg Biodiversity and Climate Research Centre in the context of the “Influence of the Qinghai-Tibetan railway on seasonal migration of Tibetan animals” project, supported by a JSPS Grant-in-Aid for Scientific Research (A) (No. 19255005) grant. This project was also made possible through the conservation work of the Hoh Xil National Nature Reserve, now a part of the Sanjiangyuan National Park.

## In partnership with:



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

Hoshino, B., and W. Xu. 2024. Tibetan Antelope: Hoh Xil, China. Global Initiative on Ungulate Migration, editors. *Atlas of Ungulate Migration*. Convention on the Conservation of Migratory Species of Wild Animals.