



Zebra trail © Emily Bennitt

# Plains Zebra: Makgadikgadi, Botswana

## Migration Description

Zebras in this region migrate between the Okavango Delta in northern Botswana and the Makgadikgadi National Park, which are over 200 km apart. The animals spend the dry season in the Okavango Delta, a unique wetland system that provides the zebra with forage and water throughout the dry season. Once the rainy season arrives, the zebras migrate to the grasslands surrounding the Makgadikgadi salt pans. These grasslands are nutrient and mineral rich, but have no permanent water supply, making them accessible to the zebras only when seasonal rains fill the ephemeral water holes.

Zebra and wildebeest from two different migratory populations congregate in the Makgadikgadi grasslands during the wet season, forming huge herds that can be thousands strong.

## Threats to Migration

Broadly, the Plains zebra's geographic range is fragmented, and zebra have gone locally extinct in several countries over the last century. The primary risks to the Okavango-Makgadikgadi zebra migration are land-use change, human encroachment and climate change. To reach their seasonal ranges in the Makgadikgadi salt pans or the Okavango, migrating zebras travel through low value, arid scrubland, which is currently allocated as a wildlife management area. However,

tourism opportunities in this area are limited due to the lack of attractive scenery and low permanent wildlife populations, meaning this area is vulnerable to cattle encroachment and other land use changes. The loss of this area as a critical migration corridor would lead to the cessation of the migration.

Climate change models predict that Botswana will become hotter and drier. Movement models suggest that a reduction in annual rainfall will negatively impact the migration, making successful migratory journeys less likely for zebras and other animals that use these movement corridors.



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Zebras follow game trails through the flat, Makgadikgadi grasslands to access waterholes.

## Local Population Facts

### Migration



### Threats



## Species Facts

**Common name:** Plains zebra

**Species name:** *Equus quagga*

**Range:** Fragmented ranges in southern and eastern Africa

**Diet:** Grasses, some woody browse

**Global population:** 150,000–250,000

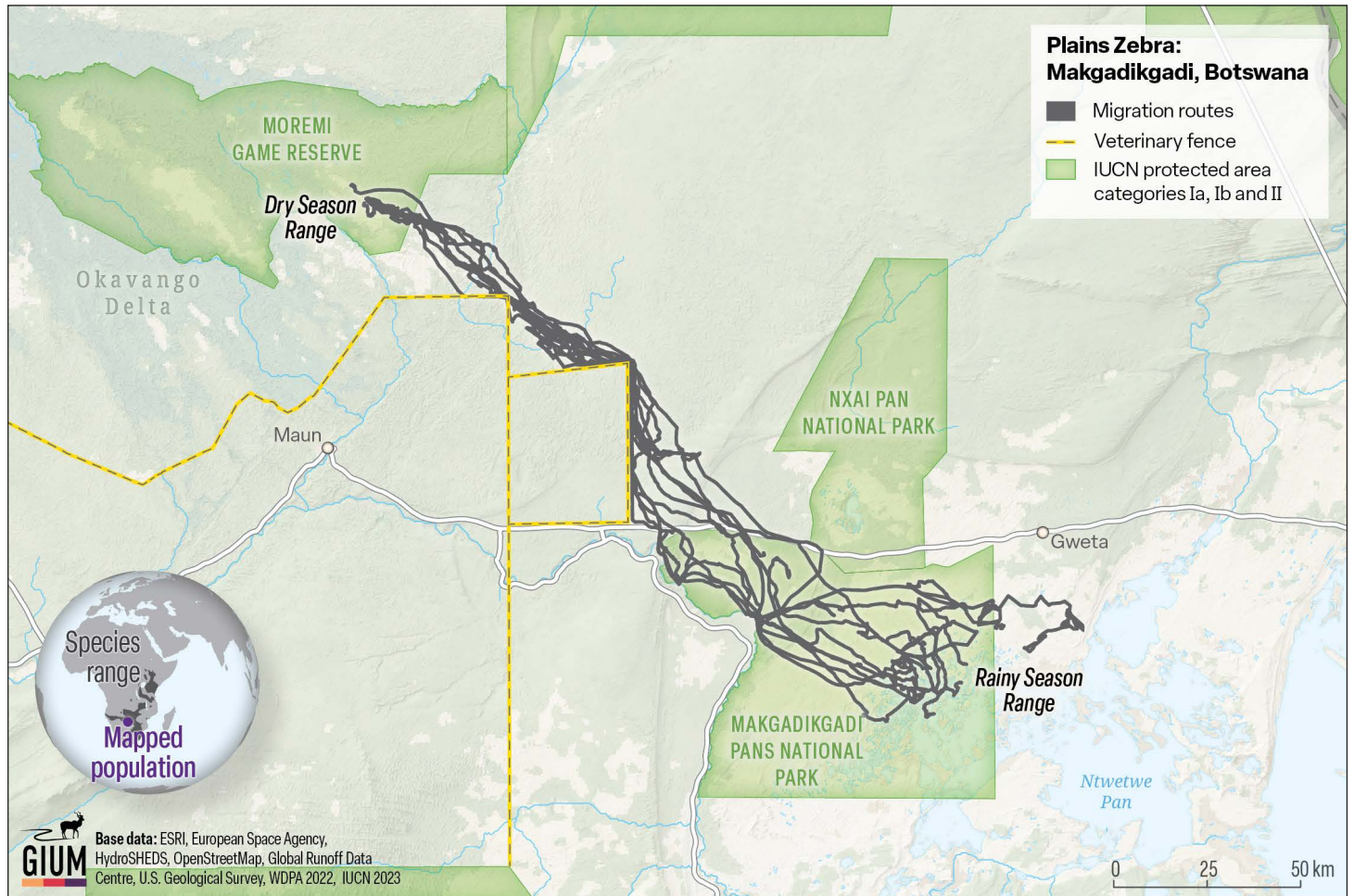
### IUCN Conservation Status

**NT** Near threatened

### CMS Status

Not listed

# Plains Zebra Migration



## Study Information

### Sample size

7 individuals

### Relocation frequency

Hourly (maximum) GPS fixes, monthly visual relocation

### Project duration

2 years (2007–2008)

## Data Analysis

### Delineation of migration periods

Net squared displacement to delineate migration between dry and rainy season ranges

### Models derived from

Line buffer (900 m width)

## Route Summary

### Average migration month

*\*Highly variable, depending on rainfall*

- Dry to wet season transition: November
- Wet to dry season transition: May

### Average number of days migrating

*\*Highly variable, depending on rainfall*

- Dry to wet season transition: 10–20 days
- Wet t: 8–14 days

### Migration route length

- Min: 237 km
- Mean: 280 km
- Max: 348 km

## Data Providers

Data were collected under the direction of Dr. Hattie Bartlam-Brooks then at the University of Bristol and subsequently at the Royal Veterinary College, London. Funding was provided by the Leverhulme Trust and the Wilderness Trust.



Migratory zebra in the Makgadikgadi grasslands



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.



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

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