Global Initiative on Ungulate Migration

FACT SHEET

Mule Deer: East Kootenay, British Columbia, Canada

Migration Description

Mule deer living in the East Kootenay typically migrate from the lower elevation valley bottoms and slopes in the Rocky Mountain Trench where they spend the winter towards high elevation summer ranges in the Rocky and Purcell Mountains. Most deer start their spring migration in May and reach their summer ranges by early June. Most mule deer have begun migrating back to their winter range by the end of October. Mule deer show high fidelity to specific migration routes and seasonal ranges year to year. They are typically more dispersed than other ungulates in the region like elk or bighorn sheep, with individuals taking multiple different paths from shared winter ranges to widely distributed summer habitats. This suggests mule deer populations require more extensive, interconnected landscapes to maintain their migration pathways. In this ecosystem, mule deer often migrate along ridges, main valleys, and through narrow mountain passes to access remote summer ranges. Monitoring efforts have identified mountain passes as pinch points where animals have few alternative routes, underscoring their importance for migration.

Threats to Migration

Most East Kootenay mule deer migrations cross a working landscape characterized by extensive resource roads, moderate levels of housing developments, highways, logging, mining, and recreation. More research to assess these activities' impacts is still needed, but deer rarely cross the Rocky Mountain Trench during migration, which is characterized by settled areas, a highway, many fences, and a large hydroelectric reservoir. Notably, there are no protected areas that are close to matching the extent of a single deer's annual home range, highlighting the importance of collaborative management of working landscapes to maintain this species' extensive migrations. Increasing human development and extractive industries may further fragment the mule deer's migratory range. Several high-value mountain pass movement corridors have been legally closed to motorized use during specific seasons, yet local knowledge and monitoring suggest illegal access is widespread. Increased enforcement of existing closures to maintain the corridors' ecological function and safeguard these migrations is needed, along with expanded seasonal closures and targeted road restoration. This region is currently being monitored for the spread of chronic wasting disease. Chronic wasting disease has been confirmed near Cranbrook as of January 2024, suggesting there is a high risk of transmission on the mule deer's winter range in that area. Deer summering to the east in Alberta and to the south in Montana are seasonally closer to CWD-positive areas than deer migrating into the Purcell mountains.

Local Population Facts

Migration

Seasonal

Medium *27.1 km (avg.)*

Threats

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

Species Facts

Common name: Mule Deer

Species name: *Odocoileus hemionus*

Range: Arid and mountainous environments of western North America

Diet: Herbaceous plants, and the leaves and twigs of woody shrubs

Global population: ~3.5 million

IUCN Conservation Status

LC Least concern

CMS Status

Not listed

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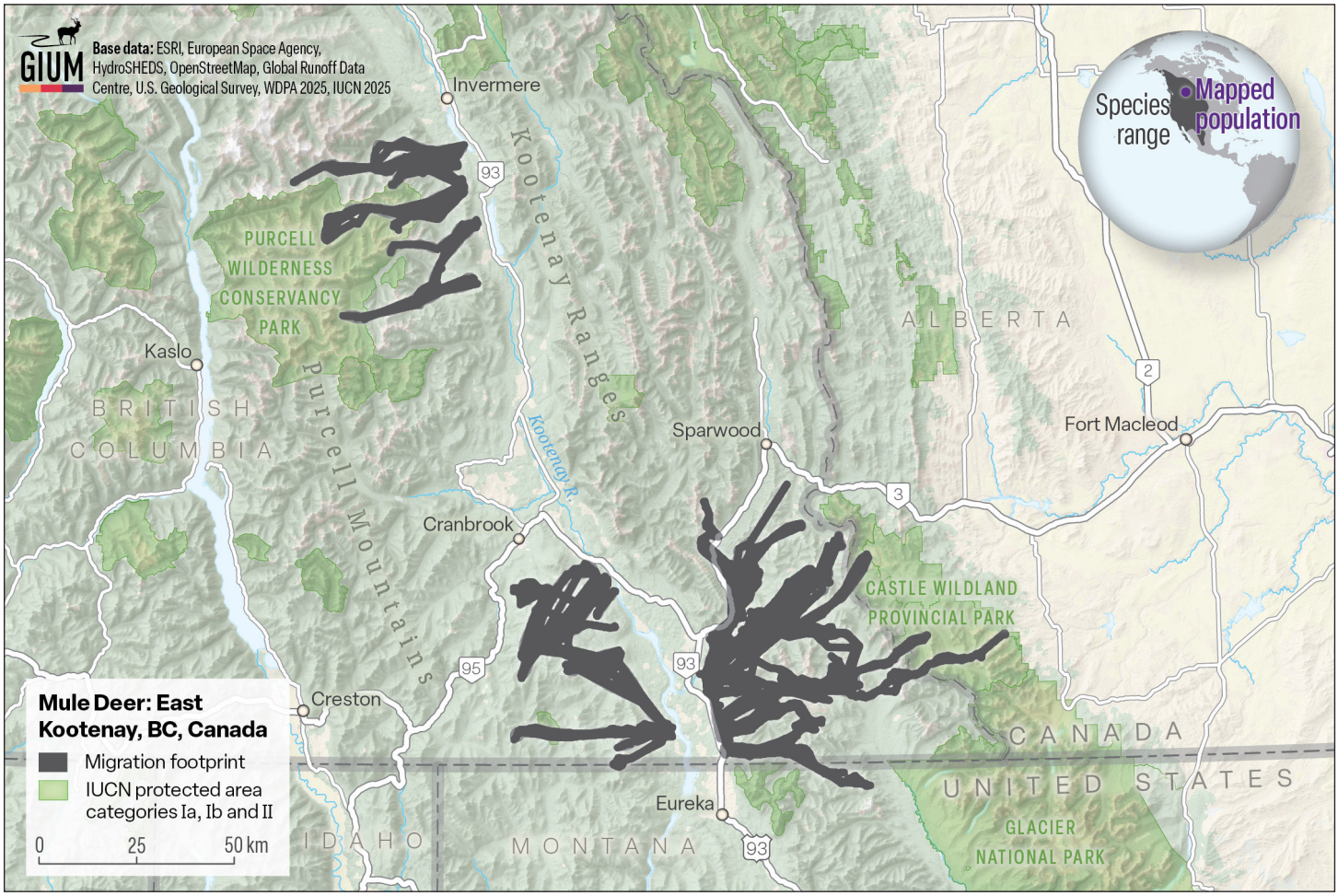
Mule Deer Migration



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
80 individuals

Relocation frequency
4 hours

Project duration
2015–2019

Data Analysis

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

Models derived from
Line buffer (1km buffer)

Route Summary

Migration start and end date (median)
- Spring:May 21–May 31
- Fall: October 09–October 24

Average number of days migrating
- Spring: 12 days
- Fall: 15 days

Migration route length
- Min: 0.5 km
- Mean: 27.1 km
- Max: 76.6 km

Data Providers

Data were collected through the efforts of Patrick Stent with the Ministry of Forestry for British Columbia and a separate project led by Gary Phillips of Yaq̓it ʔa·knuqti ‘it First Nation and Clayton Lamb with the Wildlife Science Center. Mapping and analysis were conducted by Clayton Lamb.

In partnership with:

Yaq̓it ʔa·knuqti’it

Wildlife Science Centre
BIODIVERSITY PATHWAYS

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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

Lamb, C., G. Phillips, and P. Stent. 2025. Mule Deer: East Kootenay, British Columbia, Canada. Global Initiative on Ungulate Migration, editors. *Atlas of Ungulate Migration*. Convention on the Conservation of Migratory Species of Wild Animals.