



© Clayton Lamb

Elk: Southern Rocky Mountain Trench, British Columbia, Canada

Migration Description

The elk population of the East Kootenay in southeastern British Columbia comprises a patchwork of subpopulations, with the greatest concentration in the southern Trench and Elk Valley. There, elk spend the winter along mountain valleys and in the river floodplains of the Kootenay and Columbia Rivers between the Purcell and Rocky Mountains and on productive grasslands in the Elk Valley. These populations are partially migratory and exhibit complex migratory behaviors. While residents and migrants share a winter range, in spring some individuals migrate while others remain on their winter range year-round. Migrants adopt two main behaviors, with some migrating longer distances at a lower elevation, and others performing elevational migrations, traveling shorter distances but with greater altitudinal gain. Thus, elk migrations in the Trench/Elk Valley can vary from a few kilometers to over 100 km. Elk migrating longer distances tend to travel along valleys, while elk migrating higher in elevation tend to have less linear movements as they travel up and down mountain slopes. Elk may change strategy year to year, shifting between making long, lower-elevation migrations to migrating shorter distances at higher elevations, and changing the amount of time spent on summer range. The start of migration for fall and spring can vary year to year, depending on the amount of snow on the ground.

Threats to Migration

Elk migrations in the Southern Trench and Elk Valley face growing pressures from human activity and ecosystem change. Forage on high-elevation summer ranges has likely declined due to drought, forest encroachment from wildfire suppression, and dense replanting after timber harvest. On both winter and summer ranges, cattle grazing on public land increases competition for limited forage. Winter ranges face additional stressors: overgrazing, fences that block animal movement, industrial activity from forestry and mining, and expanding agricultural attractants that can lead to crop damage and alter migratory behaviour. Highways, roads, and rail lines add risk. Collisions with vehicles and trains can be a major source of mortality, with resident elk in the Elk Valley roughly twice as likely as migratory elk to die from human-caused factors. At the same time, predators such as wolves and grizzly bears have recovered, increasing predation risk for migratory animals. The proportion of migrating elk has declined over the past 50 years in the Southern Trench, while the Elk Valley has remained more stable; both now support roughly equal proportions of migrants and residents. Population size has fluctuated, dropping from ~16,000 in the early 2000s to ~9,000 in the 2010s, with a partial rebound to ~11,000 in the 2020s. Increasing recreation and road density likely displace elk from high-quality habitats and elevate energetic stress.

Local Population Facts

Migration

Seasonal 
Medium 21 km (avg.)

Threats

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

Species Facts

Common name: Elk

Species name: *Cervus elaphus canadensis*

Range: North America

Diet: Woody browse, grasses, forbs

Global population: ~1 million

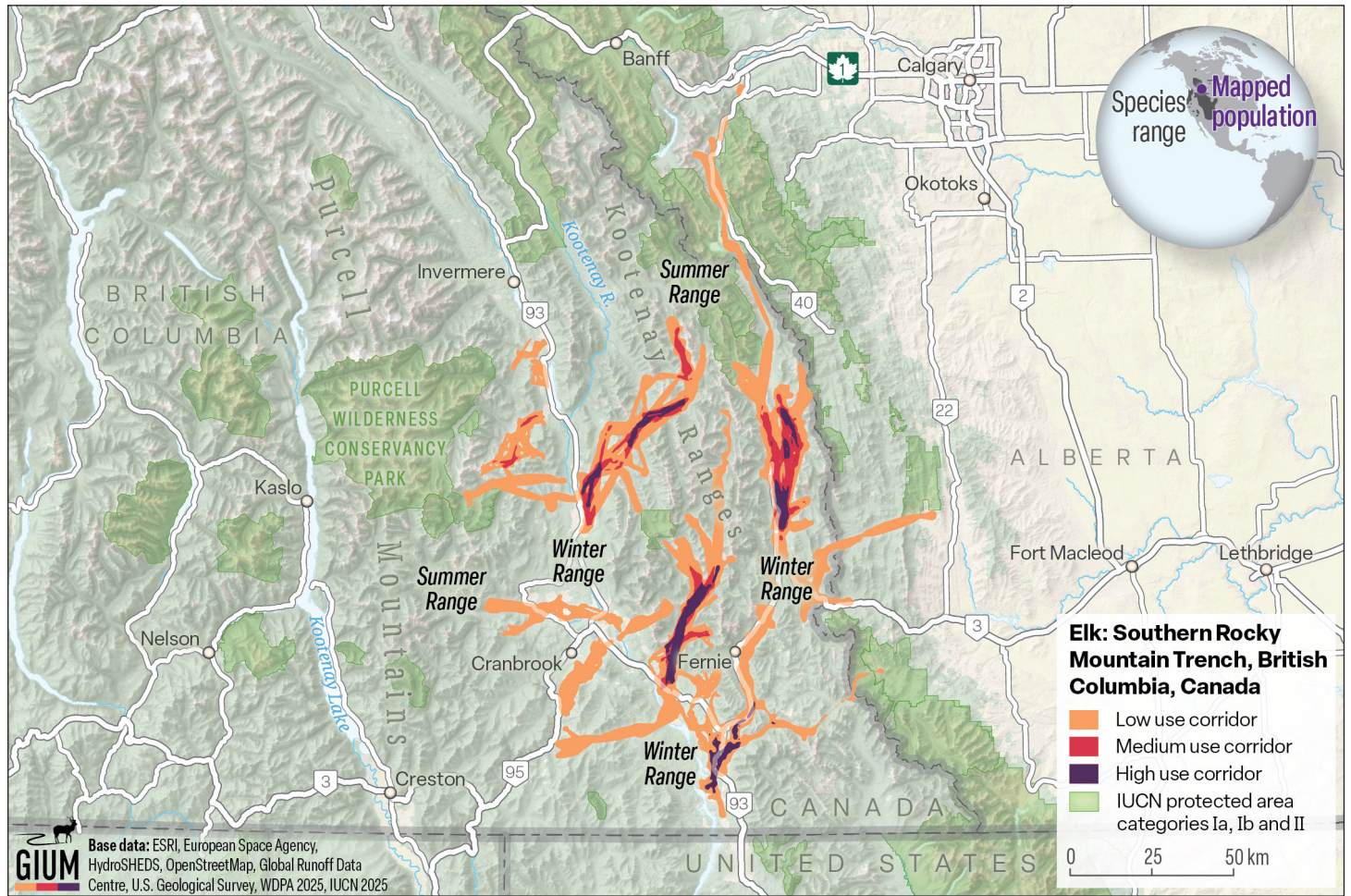
IUCN Conservation Status

LC Least concern

CMS Status

Not listed

Elk Migration



Study Information

Sample size

152, 80 migratory

Relocation frequency

Ranging from every four hours to twice a day

Project duration

2007–2025

Data Analysis

Delineation of migration periods

Net squared displacement to delineate migration between seasonal ranges.

Models derived from

Brownian Bridge Movement Model with fixed motion variance.

Route Summary

Migration start and end date (median)

- Spring: May 11–May 30
- Fall: October 13–October 31

Average number of days migrating

- Spring: 19 days
- Fall: 23 days

Migration route length

- Min: 0.75 km
- Mean: 21 km
- Max: 124 km

Data Providers

Data were collected by Emily Chow and Tara Szkorupa with the government of British Columbia, Kim Poole with Aurora Wildlife Research, the Sparwood and District Fish and Wildlife Association, Clayton Lamb with the Wildlife Science Center, and by Gary Phillips of Yaqit ʔa-knuqʔit ʔit First Nation.

In partnership with:



Ministry of Forests



Yaqit ʔa-knuqʔit ʔit



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

Chow, E., Lamb, C. Poole, K., Szkorupa, T. and G. Phillips. 2026. Elk: Southern Rocky Mountain Trench, British Columbia, Canada. Global Initiative on Ungulate Migration, editors. *Atlas of Ungulate Migration*. Convention on the Conservation of Migratory Species of Wild Animals.