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Pronghorn: Northern Sagebrush Steppe, Saskatchewan, Canada & Montana, USA

Migration Description

Pronghorn in Saskatchewan and northern Montana live at the northern edge of their geographic range, and their populations fluctuate with environmental conditions. In Saskatchewan, numbers declined sharply in the early 1990s due to human settlement, overharvesting, and the severe winter of 1906-07. Conservation efforts helped pronghorn rebound to 15,000 by 1957, but subsequent decades saw repeated declines and recoveries. After a crash in the mid-1990s, pronghorn populations slowly recovered before another sharp decline between 2011 and 2013. Since then, numbers have steadily increased and are now stable at around 15,000-20,000. Montana has experienced similar repeated declines and recoveries over the past decades, with northern Montana trends currently indicating some population decline.

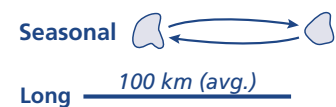
In Saskatchewan and northern Montana, pronghorn will use agricultural areas. However, their long-term survival depends on access to native prairie, particularly silver sagebrush habitat for winter forage. In fall, pronghorn generally migrate south to wintering areas with accessible sagebrush. In spring, they follow green-up patterns to reach summer and fawning ranges, using stop-over sites along the way to recover body condition. They may also shift winter ranges in response to extreme weather or forage shortages, making what are known as “facultative winter movements” to escape deteriorating conditions.

Threats to Migration

Today, pronghorn migrations are hindered by cumulative anthropogenic features, which fragment the Northern Sagebrush Steppe into a checkerboard of native habitat and agricultural parcels. Native prairie continues to be lost to large-scale agriculture and energy development. Linear features like roads, fences and railways pose significant barriers for pronghorn migrating across the landscape (Fig. 1, 2). Because pronghorn prefer to crawl under fences, they need ample space to squeeze underneath the bottom wire. However, when snow is deep, fences that are typically semi-permeable in other conditions can trap pronghorn, resulting in mass die-offs. Pronghorn typically avoid all forms of roads. For instance, the Trans-Canada highway, a high-speed transportation corridor, bisects their range. While not a complete barrier to migration, it hinders movement and leads to animal-vehicle collisions. The landscape is further fragmented by pockets of oil and gas wells in high densities, as well as the increasing development of renewable energy. Saskatchewan has plans to increase the extraction of critical minerals such as helium and potash, which will bring further development to the prairies. Research is urgently needed to address how incremental development, specifically cultivation, renewable energy and linear infrastructure will impact the sustainability of pronghorn movements that are critical for maintaining populations.

Local Population Facts

Migration



Threats



Species Facts

Common name: Pronghorn

Species name: *Antilocapra americana*

Range: Prairie habitats of North America

Diet: Mixed-feeder herbivore

Global population: 750,000

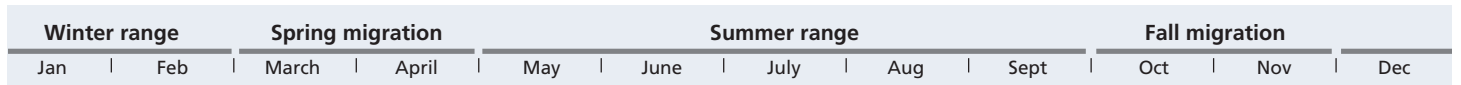
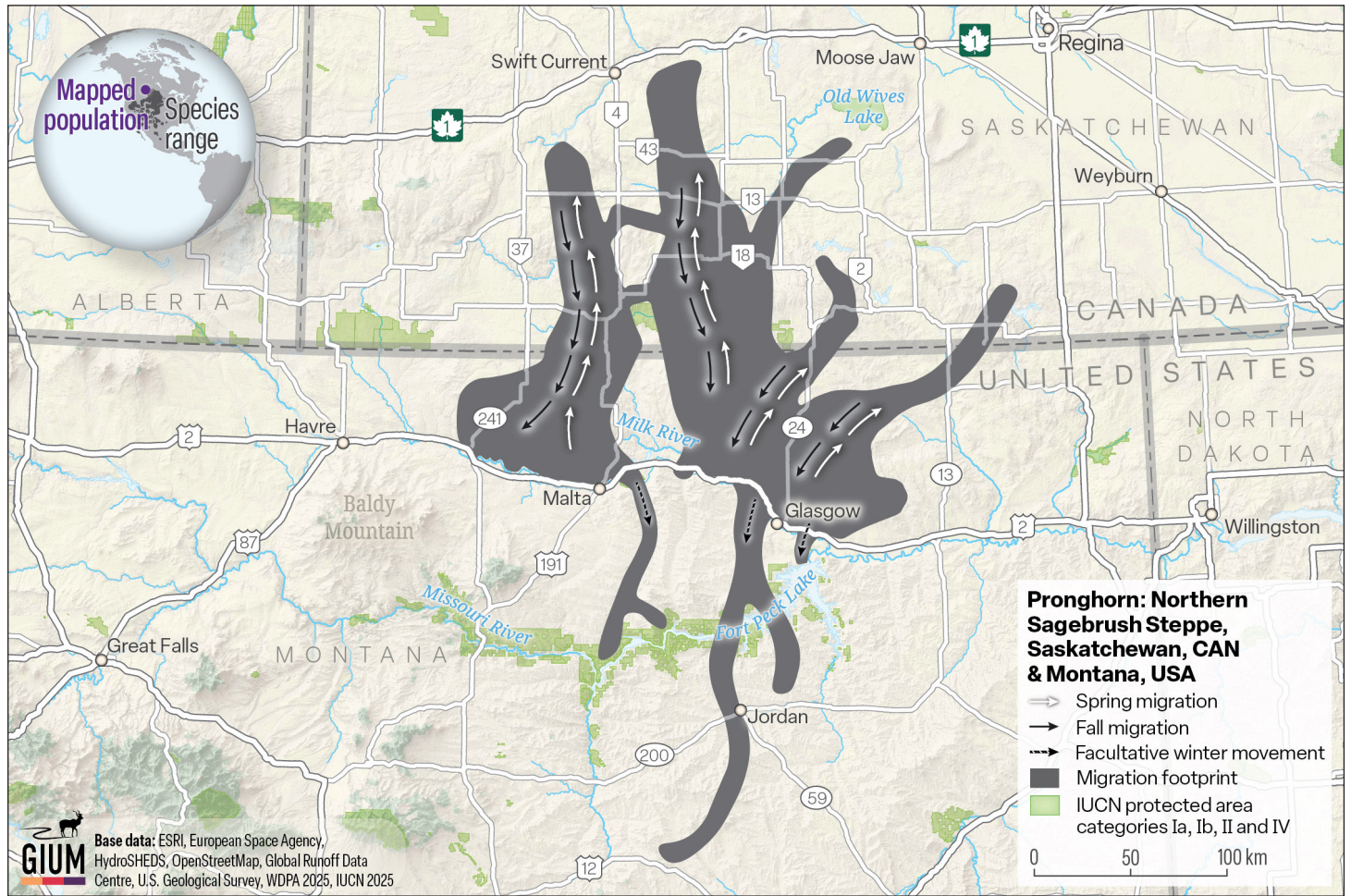
IUCN Conservation Status

LC Least concern

CMS Status

Not listed

Pronghorn Migration



Study Information

Sample size

111 individuals: MT (n = 102) and SK (n = 9)

Relocation frequency

4 hours (n = 47), 2 hours (n = 64)

Project duration

2007–2011

Data Analysis

Models derived from

Due to data sharing sensitivities, we adapted this generalized migration map from a previous connectivity network product to characterize pronghorn migrations in southern Saskatchewan and northern Montana. The connectivity network product was modeled using integrated multi-scale predictive models, both derived from 111 tracked individuals.

Route Summary

Pronghorn in the Northern Sagebrush Steppe often perform transboundary migrations, crossing the border between Canada and the United States. They typically initiate their spring migrations in late March and their fall migrations by early November. Many pronghorn make facultative winter movements to escape severe conditions. In these instances, large herds (from 100 to several thousand) will move rapidly in unison to find more moderate conditions and open habitat. Unfortunately, pronghorn become susceptible to mass die-offs and mortality events when they are unable or impeded to escape extreme winter conditions. Their migrations can range from 8 km to 350 km in a single trip. The longest recorded migration for the species occurred in the Northern Sagebrush Steppe, in southeastern Alberta, where a female traveled 888 km round trip.

Data Providers

Data were collected through the efforts of John Pogorzelec and Andrew Jakes. These continued efforts would not be possible without Leanne Heisler with the Saskatchewan Ministry of the Environment and Paul Jones from the Alberta Conservation Association.

In partnership with:



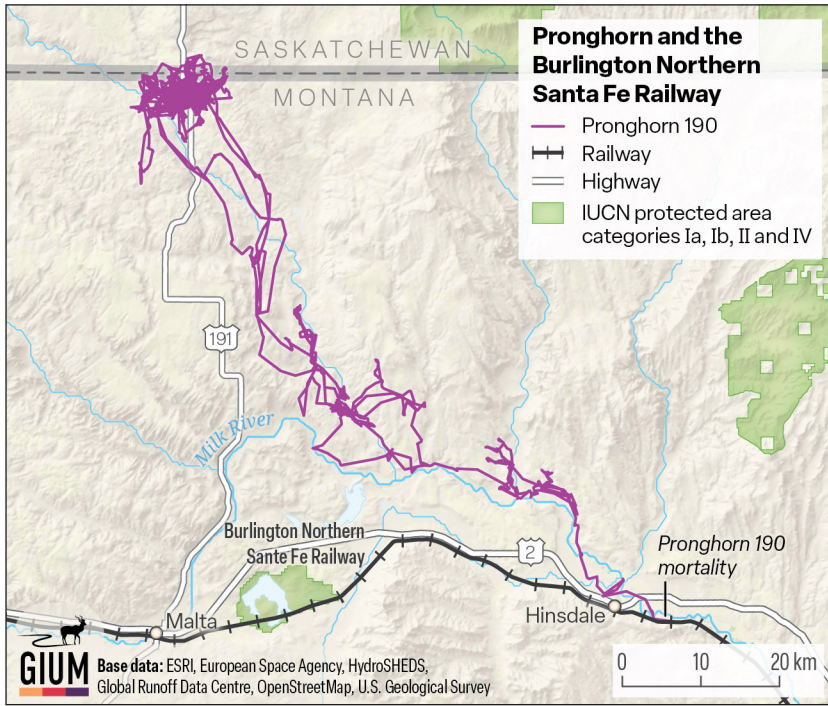


Figure 1: Train collisions cause significant casualties for pronghorn. Pronghorn 190 was one of the many pronghorn struck by trains in the Mountain West. She migrated from the United States-Canada border south into Montana (~100 km) and was hit while attempting to cross the Burlington Northern Santa Fe Railway. Railways pose a particular challenge for pronghorn. Railways often have less snow than surrounding areas, leading pronghorn to congregate on the tracks to escape severe conditions. When trains come, they attempt to outrun them by running away down the tracks. This behavior has led to mass mortalities both in Canada and Montana when trains hit animals that don't have an easy way to get off the railroad. Increased partnership with railway companies is needed to mitigate this issue, which may include retrofitting, speed adjustments and other regulation options. The lack of up-to-date data on common collision sites perpetuates this problem.

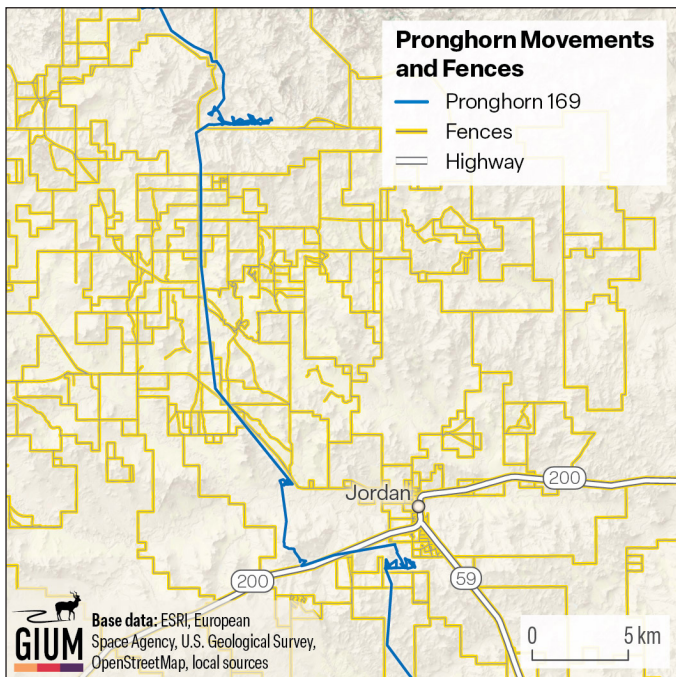


Figure 2: Fences can significantly disrupt pronghorn migrations. The proliferation of fences across the Northern Sagebrush Steppe poses a significant challenge for migrating pronghorn. Pronghorn 169's movements are emblematic of the impediments caused by fencing for pronghorn. On her migration south during the winter, Pronghorn 169 traveled back and forth for six days before eventually crossing under a fence blocking her path. Pronghorn predominantly cross under fences, which often results in animals sustaining serious injuries. At times, fences can trap pronghorn in deep snow, resulting in mass die-offs. When fences are wildlife-friendlier, they can positively affect pronghorn daily and migration movements, which are essential for them to survive at the northern periphery of the species range.

