

Alberta Conservation Association
2018/19 Project Summary Report

Project Name: Pronghorn Road Crossing Enhancement (Pronghorn Xing)

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Project Leader: Paul Jones

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Partnerships

Alberta Environment and Parks

Alberta Transportation

Miistakis Institute

National Wildlife Federation

National Fish and Wildlife Foundation

Nature Conservancy of Canada

Saskatchewan Ministry of Environment and Infrastructure

Saskatchewan Government Insurance

Key Findings

- *Pronghorn Xing* app released to the general public via the App Store and Google Play.
- One hundred and thirty-six users have submitted at least one observation with the mean being 11.5 observations per user.
- Between November 2017 and February 2019 there were 997 total observations of pronghorn reported via the app, of which 13 were of pronghorn dead along roads.

Introduction

Among the diversity of prairie wildlife, the pronghorn (*Antilocapra americana*) is the most specialized and representative large mammal. Within the Northern Sagebrush Steppe of Alberta, Saskatchewan, and Montana, 55% of collared pronghorn made seasonal migrations, including the longest recorded migration for the species at 888 km (Jakes et al. 2018). Along the migration pathway, pronghorn must navigate their way across Highway 1, which includes crossing three fences, four lanes of high-speed traffic, and a set of railroad tracks. These pinch points along the migration pathway are a formidable challenge for migrating pronghorn.

To address this migration challenge, a citizen science project called Pronghorn Xing was initiated in the spring of 2017. The Pronghorn Xing project is a partnership with ACA, Miistakis Institute, Alberta Environment and Parks, Alberta Transportation, Saskatchewan Ministry of Environment, Saskatchewan Government Insurance, the National Wildlife Federation, and Nature Conservancy of Canada. Pronghorn Xing is a citizen science program developed to ground truth seasonal movement pinch-points identified by connectivity modeling across highways in Alberta, Saskatchewan, and Montana and increase public engagement in pronghorn science and conservation. Information on wildlife sightings collected by the public will enable us to better understand where pronghorn and other wildlife are commonly crossing, involved in collisions, or staging next to the highway. Ultimately this will lead to development of tools to reduce wildlife – vehicle collisions while ensuring the safe passage of wildlife across highways. The generated information will be shared with Government agencies in Alberta, Saskatchewan, and Montana.

Primary objectives are to 1) develop a user-friendly app to record the location of pronghorn and other ungulates along highways and roads within the study area, 2) garner public support and participation, and 3) share our information with our partners, particularly those working to mitigate impediments along key migration routes across highways in Alberta, Saskatchewan, and Montana.

Methods

During the summer of 2017, Miistakis Institute was contracted to develop the *Pronghorn Xing* smartphone app and corresponding website. The app was developed, and beta tested by ACA staff who drove transects throughout the study area and recorded sightings of real and imaginary wildlife along the road. The app was released to the public (App Store and Google Play) and the project website was made live in September 2017. In November 2017, the general public and ACA staff began using the app and reporting observations throughout the study area, collecting data on wildlife species observed on, near, and adjacent to major highways and roads. During the summer of 2018, the project was expanded to include north-eastern Montana and now covers the entire Northern Sagebrush Steppe (Figure 1).

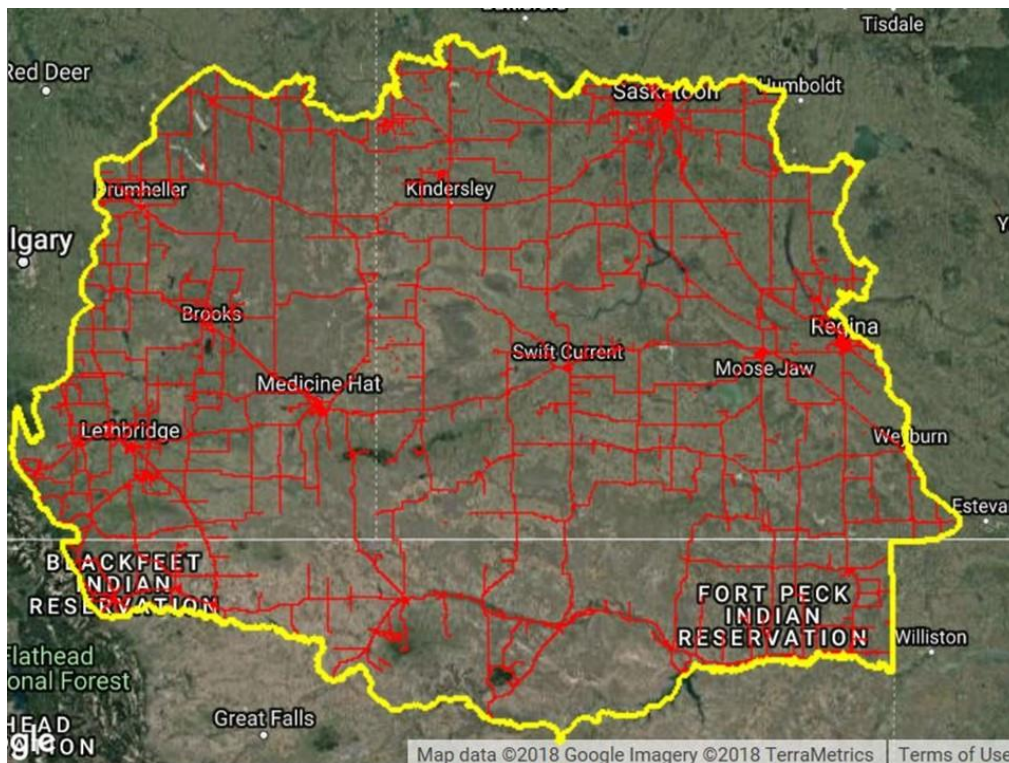


Figure 1. *Pronghorn Xing* study area in southern Alberta, Saskatchewan and northern Montana.

Results

To date, 136 individuals have signed up for Pronghorn Xing and reported at least one observation. The number of observations reported per person ranged from 1 – 125 with a mean = 11.5 ± 1.97 (SE). Pronghorn were the most reported ungulate species followed by deer and elk (Figure 2). For those reported observations of pronghorn where a location was provided in respect to the road most were beside followed by crossing the road (Figure 3).

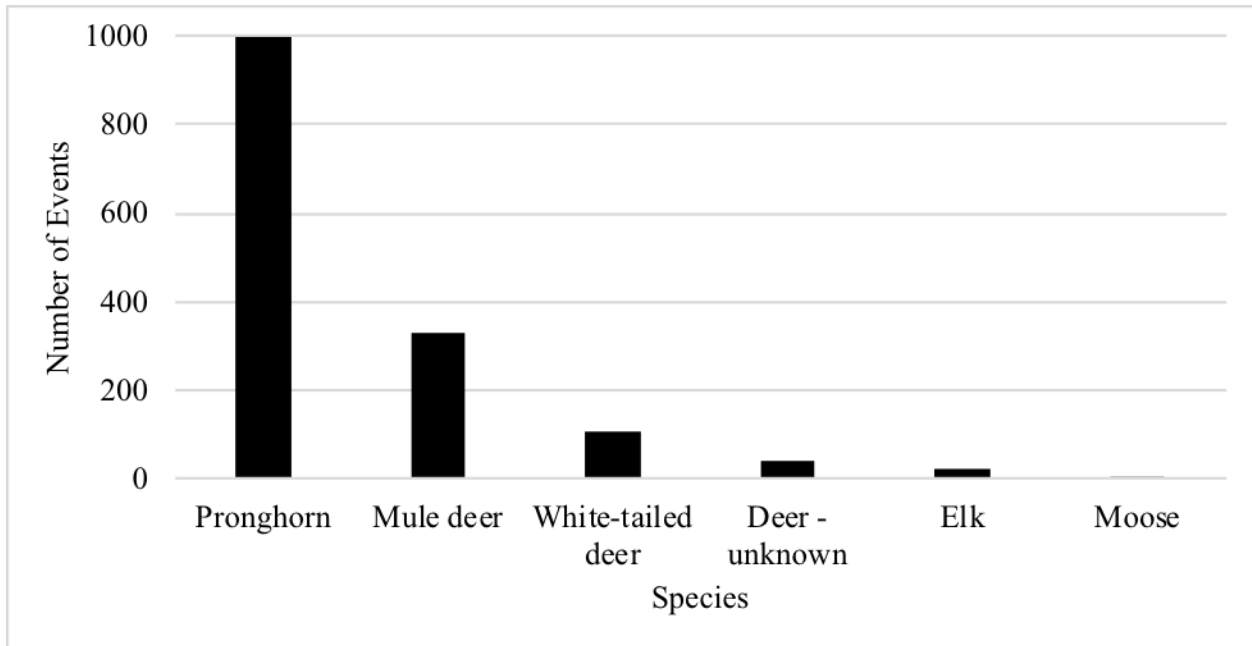


Figure 2. Number of observational events of five ungulates reported through the *Pronghorn Xing* app for southern Alberta, Saskatchewan, and northern Montana, November 2017 – February 2019.

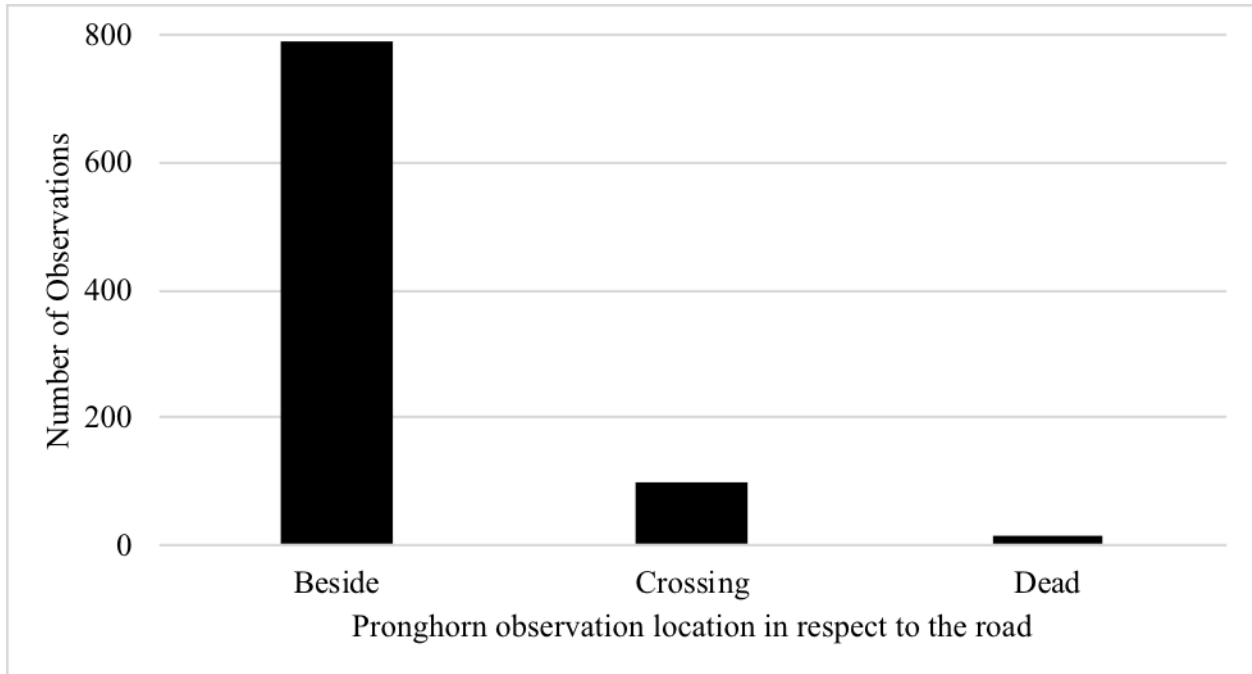


Figure 3. Number of observations of animals beside, crossing, or dead on the road reported through the *Pronghorn Xing* app for southern Alberta, Saskatchewan, and northern Montana, November 2017 – February 2019.

Conclusions

Pinch points have been identified along the Canadian highway network where seasonal pronghorn movements are impeded and need to be ground-truthed for the exact crossing location(s). The low number of crossing and dead pronghorn detected to date is not alarming. We expected that most observations of pronghorn would be beside the road as animals pile up in key locations and are selective as to when they cross the road. In addition, public support needs to be built to foster the business case to provincial and state agencies responsible for implementing strategies to improve movement. Ultimately, we believe the program will create support for the construction of an overpass(es) across Highway 1 (four lane east–west highway adjacent to a railroad) and the identification of crossing sites along secondary highways (e.g., Highway 41) where fence modifications can be installed to facilitate easier movement by pronghorn and other ungulates.

Communications

Presentations

- Pronghorn: nomads of the prairies. (P. Jones) – Lethbridge Naturalists, February 13, 2019 (19 people).
- Conserving Canada’s fastest moving mammal. (P. Jones, M. Verhage, and M. Jensen) – Science Café, November 20, 2018 (25 people)
- Pronghorn Xing: it’s about more than just trying to get to the other side! (P. Jones and A. Jakes) – 28th Biennial Pronghorn Workshop, August 15, 2018 (70 people).

Key Contacts

- Tracy Lee – Miistakis Institute
- Andrew Jakes – National Wildlife Federation

Literature Cited

Jakes, A., C.C. Gates, N.J. DeCesare, P.F. Jones, J.F. Goldberg, M. Hebblewhite, and K. Kunkel. 2018. Classifying the migration behaviors of pronghorn on their northern range. *Journal of Wildlife Management* 82:1229-1242.

Photos



Group of pronghorn crossing Highway 555 in Alberta. Photo: Amanda MacDonald



ACA staff member, Sarah Gray recording an observation of a pronghorn using the *Pronghorn Xing* app while parked on the side of the road. Photo: Mike Verhage



Postcard developed to solicit participation by the general public in *Pronghorn Xing*.
Photo: Miistakis Institute