

Alberta Conservation Association 2017/18 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
Saskatchewan Ministry of Environment
Saskatchewan Government Insurance

Key Findings

- *Pronghorn Xing* app developed, tested, and released to the general public via the App Store and Google Play.
- Thirty-four individuals have downloaded the app and submitted observations of wildlife dead, on, or adjacent to major roads in southern Alberta and Saskatchewan.
- By January 31, 2018 a total of 260 observations had been submitted of which pronghorn were the most common.

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 percent of collared pronghorn made seasonal migrations, including the longest recorded migration for the species at 888 kilometres (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, and Saskatchewan Government Insurance. Pronghorn Xing is a citizen science program developed to ground truth seasonal movement pinch-points identified by connectivity modeling across highways in Alberta and Saskatchewan 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 both Alberta and Saskatchewan.

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 Highway 1 in Alberta and Saskatchewan.

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. Following beta testing the app was released to the public (App Store and Goggle Play) and the project website was made live in September 2017. In October 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.

Results

To date, 34 individuals have signed up for Pronghorn Xing and reported a total of 260 observations. The number of observations reported per person ranged from 1 – 70 with a mean = 7.65 ± 2.48 (SE). Pronghorn were the most reported ungulate species followed by deer and moose (Figure 1). For those reported observations where a location was provided in respect to the road most were beside followed by dead on the road (Figure 2). There were a reasonable amount of observations reported across the study area (Figure 3).

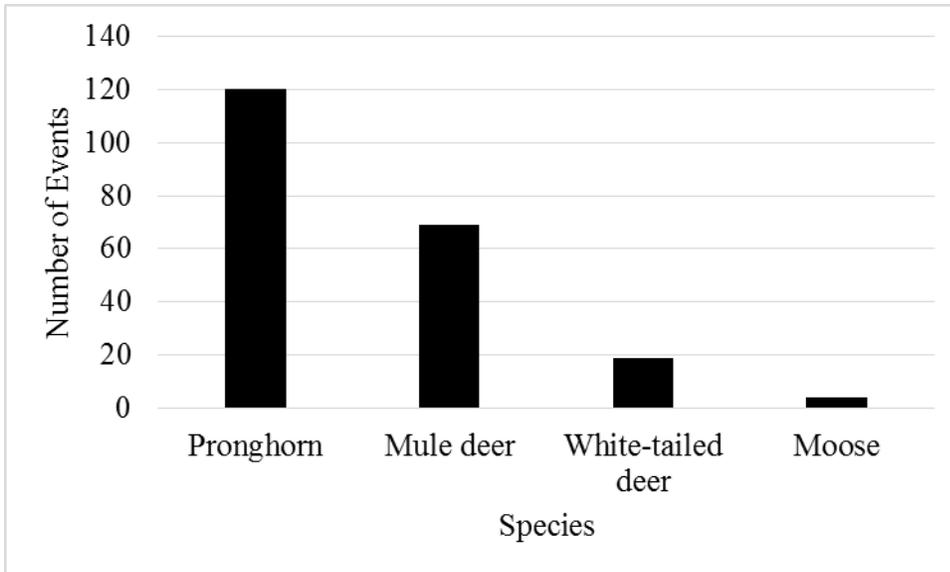


Figure 1. Number of observational events of four ungulates reported through the *Pronghorn Xing* app for southern Alberta and Saskatchewan, October 2017 – January 2018.

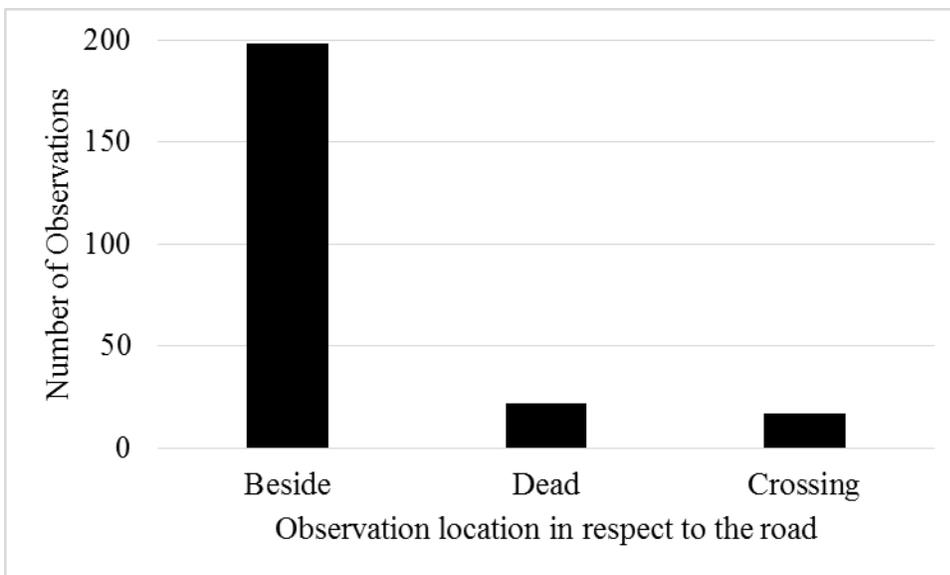


Figure 2. Number of observations of animals beside, dead, or crossing the road reported through the *Pronghorn Xing* app for southern Alberta and Saskatchewan, October 2017 – January 2018.

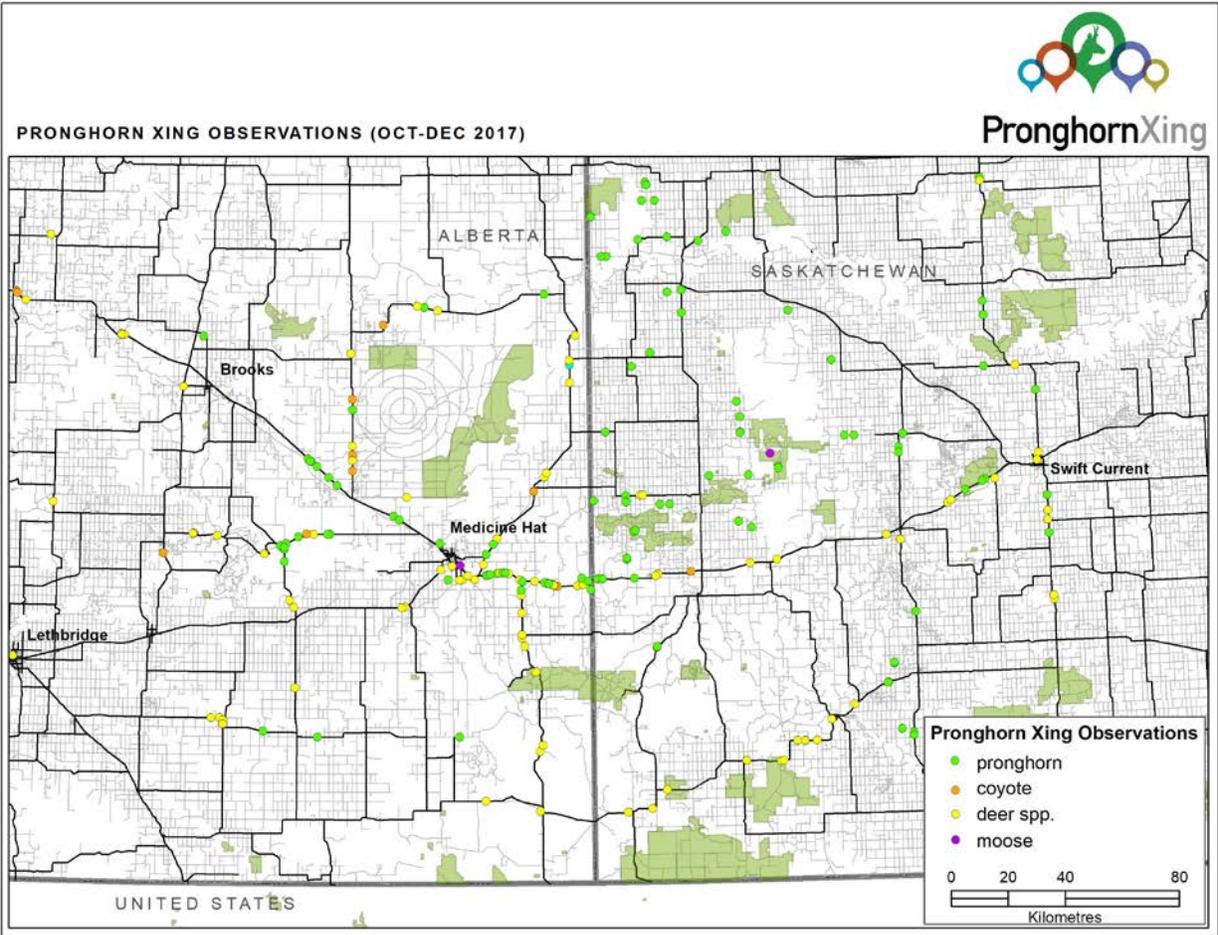


Figure 3. Distribution of observations by species from data submitted through the *Pronghorn Xing* app for southern Alberta and Saskatchewan, October – December, 2017.

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). In addition, public support needs to be built to foster the business case to provincial 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

Media

- "Pronghorn Xing: tracking the migration." *Conservation Magazine* Fall/Winter 2017:35.

Key Contacts

- Tracy Lee – Miistakis Institute

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* (in review).

Photos



Pronghorn staging on the south side of Highway 1 in Alberta during their spring migration north. Photo: Paul Jones



Male pronghorn crossing the highway near Foremost, Alberta. Photo: Paul Jones



Female pronghorn killed along Highway 1 in Saskatchewan. Photo: Paul Jones