

**Alberta Conservation Association
2018/19 Project Summary Report**

Project Name: Pronghorn Fence Crossing Enhancement

Wildlife Program Manager: Doug Manzer

Project Leader: Mike Verhage

Primary ACA staff on project: Amanda MacDonald, Jason Headley, Paul Jones, Tyler Johns and Mike Verhage

Partnerships

Alberta Environment and Parks

Alberta Fish & Game Association

National Fish and Wildlife Foundation

Key Findings

- In 2018/19, ACA completed two projects in partnership with Alberta Fish & Game Association (AFGA) where we modified 26 km of barbed-wire fence by replacing the bottom strand with double-stranded smooth wire and adjusted its height to 46 cm off the ground.
- AFGA completed an additional two projects, modifying 19 km of fence. In total, 45 km of wildlife-friendly fencing was completed in 2018/19.
- Since the initial year of the project approximately 406 km of fencing has been enhanced and an additional 32 km of page wire has been completely removed.

Introduction

Having evolved on the prairies of North America, pronghorn (*Antilocapra americana*) have not developed an instinct to jump vertical obstacles. The proliferation of fencing that followed cattle ranching into Alberta poses a serious barrier to pronghorn movement (Gates et al. 2012).

Pronghorn may cross under fence lines in some locations, but it slows down their movement making them susceptible to predators, and in some cases, strips hair off their back causing lacerations and making them vulnerable to infection and frostbite (Jones 2014). Pronghorn also may become entangled in fences and perhaps become trapped and die (Gates et al. 2012). A solution is to replace the bottom wire with double-stranded smooth wire and move it up to 46 cm; however, this is expensive and takes a lot of effort.

To help alleviate this problem, Alberta Fish & Game Association (AFGA) initiated a project in 2009, which ACA has provided assistance with. The project works with private landowners in southeastern Alberta to actively convert existing barbed-wire fences to wildlife-friendly fences. The primary objective for this project is to increase permeability within the pronghorn migration corridor in southern Alberta and reduce associated stress to wildlife, physical injury, and even death that can be caused by high densities of current barbed-wire fences. This ongoing effort benefits pronghorn and other wildlife by reducing barriers to seasonal migration and enabling wildlife to move throughout the landscape easier, without the associated stress and physical harm that animals endure when forced to cross underneath barbed-wire fences.

Methods

In the spring of 2018, we met with interested landowners and AFGA to discuss modifying fences to make them pronghorn- and wildlife-friendly. We identified candidate fence lines on maps to be modified for each participating landowner; this information was used to help plan fence modification weekends and coordinate volunteers.

In the field, we replaced the bottom strand of barbed-wire with double-stranded smooth wire and adjusted the height of the bottom wire to 46 cm. We also respaced the remaining strands of barbed-wire to ensure the fence remains functional for livestock. This alteration enables wildlife such as pronghorn and deer (*Odocoileus sp.*) to easily cross fences underneath the bottom smooth wire.

Results

We completed two fencing projects with AFGA in 2018/19, where we modified 26 km of barbed-wire fence by replacing the bottom strand with double-stranded smooth wire and adjusting its height to 46 cm. The number of projects completed over the last two years was fewer than previous years due to the extreme fire hazard that prevailed throughout southern Alberta for much of the summer. With this hazard in mind, we purposefully chose projects that were smaller in scope and that required fewer staff members and volunteers. AFGA completed an additional two projects modifying 19 km of fence. In total, 45 km of wildlife-friendly fencing was completed (Figure 1).

Figure 1. Kilometres of wildlife-friendly fence completed per year by Alberta Fish & Game Association and ACA.

Conclusions

Replacing the bottom strand with smooth wire at 46 cm is a practical solution to reducing physical harm done to pronghorn and other wildlife and it also eliminates barriers to movement on a fine-scale, project-by-project basis. The primary challenge associated with this solution is that there is currently an extremely high density of existing barbed-wire fences within the Grasslands Natural Region and the pronghorn migration corridor in southeastern Alberta (Seward et al. 2014). Prioritizing focal areas within the migration corridor based on previous animal collar data is one method of identifying priority areas to work within; however, this would also require the cooperation of private landowners living in these areas. The cumulative effort of completed projects have the potential for landscape connectivity for pronghorn. Other

considerations include the cost, time, effort, and materials required to complete fence modifications. Certainly, these projects would not be possible without the leadership and coordination from AFGA, dedicated volunteers, and participating private landowners.

Key Contacts

T.J. Schwanky – Alberta Fish & Game Association

Martin Sharren – Alberta Fish & Game Association

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)

Literature Cited

Gates, C.C., P. Jones, M. Sutor, A. Jakes, M.S. Boyce, K. Kunkel, and K. Wilson. 2012. The influence of land use and fences on habitat effectiveness, movements and distribution of pronghorn in the grasslands of North America. Pages 277–294. *In*: M.J. Somers and M. Hayward, editors. Fencing for conservation: restrictions of evolutionary potential or a riposte to threatening processes? Springer-US, New York, New York USA.

Jones, P.F. 2014. Scarred for life; the other side of the fence debate. *Human-Wildlife Interactions* 8: 150–154.

Seward, B., P. F. Jones, and A. T. Hurley. 2014. Where are all the fences: mapping fences from satellite imagery. *Proceeding of the Pronghorn Workshop* 25:92-98.

Photos



Alberta Fish & Game Association volunteers enhancing a barbed-wire fence by securing the bottom smooth wire at 46 cm above ground. Photo: Mike Verhage



ACA staff member, Amanda MacDonald, and Alberta Fish & Game Association volunteer use a power stapler to respace existing barbed wires and secure the bottom smooth wire at 46 cm (roughly knee height) above ground. Photo: Jason Headley



Three pronghorn fawns observed by staff members while working on wildlife-friendly fences in southeast Alberta. Photo: Jason Headley



We attach reflectors to our wildlife-friendly fences to increase visibility and reduce injury and even mortality among sage grouse and other grassland birds. Photo: Jason Headley

