

**Alberta Conservation Association
2020/21 Project Summary Report**

Project Name: Pronghorn Fence Crossing Enhancement

Wildlife Program Manager: Doug Manzer

Project Leader: Amanda MacDonald

Primary ACA staff on project: Tyler Johns, Mike Jokinen, Paul Jones, Amanda MacDonald, Adam Moltzahn, Phil Rose, and Mike Verhage

Partnerships

Alberta Environment and Parks

Alberta Fish & Game Association

Key Findings

- In 2020 Alberta Conservation Association (ACA) completed three projects in partnership with Alberta Fish & Game Association (AFGA) where we modified 34 kilometres of barbed-wire fence by replacing the bottom strand with double-stranded smooth wire and adjusted its height to 46 centimetres off the ground.
- Approximately 2.5 kilometres of obsolete fence line was removed from one property, including fencing which encompassed inactive natural gas wells. A kilometre of high tensile wire was also removed.
- Since the initial year of the project over 500 kilometers of fencing has been enhanced and an additional 34.5 kilometers 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 centimetres; however, this is expensive and labour intensive.

To help alleviate this problem, Alberta Fish and Game Association (AFGA) initiated a fence enhancement project in 2009. ACA provides assistance with identifying important pronghorn movement zones and landowner introductions, as well as assistance with field activities. The project works with private landowners in southeastern Alberta to actively convert existing barbed-wire fences to wildlife-friendlier 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 deer by reducing barriers to seasonal movements and enabling wildlife to move throughout the landscape more easily, without the associated stress and physical harm that animals endure when forced to cross underneath barbed-wire fences.

Methods

In response to the challenges imposed by COVID-19, methodology for the project was altered from previous years. A COVID-19 safety protocol was developed to ensure the fencing events could be conducted in a safe and responsible manner. Each month, July – September, fencing events were evaluated on a case-by-case basis to allow for the consideration of provincial health guidelines and the feasibility of conducting a safe event. Upon identifying landowners interested in modifying fences to make them pronghorn- and wildlife-friendlier, dates for the events were set with the understanding they could be cancelled with changing provincial health recommendations. 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, small crews worked with their cohorts and replaced the bottom strand of barbed-wire with double-stranded smooth wire and adjusted the height of the bottom wire to 46 centimetres (Paige 2020). We also re-spaced the remaining strands of barbed-wire to ensure the fence remains functional for livestock. When approved by the landowner a gap of 30 centimetres was left between the top two wires to prevent entanglement by other ungulates crossing over the fence (Paige 2020). These alteration enables wildlife such as pronghorn and deer (*Odocoileus sp.*) to easily cross fences underneath the bottom smooth wire or safely jump over the top wire (Burkholder et al. 2018 and Jones et al. 2020).

Results

We completed three fencing projects with AFGA in 2020, where we modified 34 kilometres of barbed-wire fence by replacing the bottom strand with double-stranded smooth wire and adjusting its height to 46 centimetres (Figure 1). Additionally, we removed approximately 500 metres of fence line from around inactive natural gas well sites. To adhere to our COVID-19 safety protocol we allowed fewer volunteers to participate in the fencing weekend events, resulting in a below average distance modified (Avg. = 43 kilometres). This is the second shortest distance modified since the implementation of the project in 2009. Projects were completed within the Milk River Basin, allowing for fine-scale barrier reduction over the large geographic range which pronghorn utilize as migration corridors.

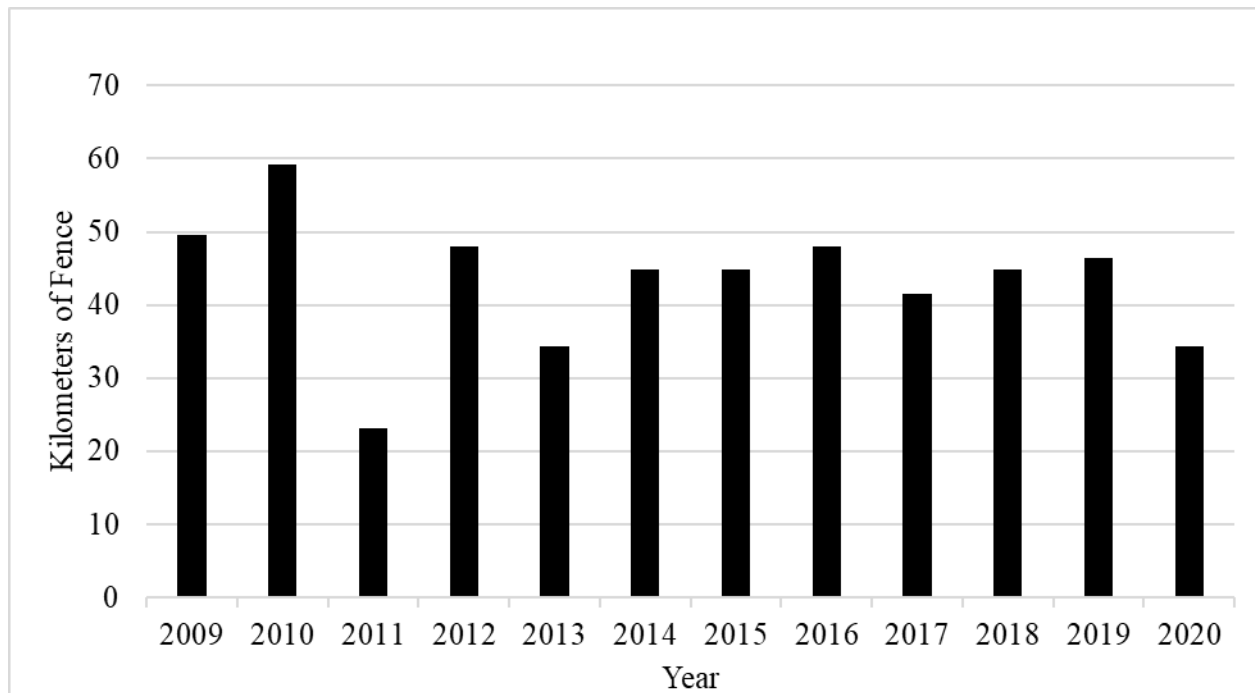


Figure 1. Kilometres of wildlife-friendlier fence completed per year by Alberta Fish & Game Association and Alberta Conservation Association.

Conclusions

Replacing the bottom strand with smooth wire at 46 centimetres 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

Delinda Ryerson – Alberta Fish & Game Association

Literature Cited

Burkholder, E. N., A. F. Jakes, P. F. Jones, M. Hebblewhite, and C. J. Bishop. 2018. To jump or not to jump: mule deer and white-tailed deer fence crossing decisions. *Wildlife Society Bulletin* 42:420-429.

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.

Jones, P. F., A. F. Jakes, A. M. MacDonald, J. A. Hanlon, D. R. Eacker, B. H. Martin, and M. Hebblewhite. 2020. Evaluating responses by sympatric ungulates to fence modifications across the Northern Great Plains. *Wildlife Society Bulletin* 44:130–141.

Paige, C. 2020. *Alberta Landholder's Guide to Wildlife Friendly Fencing*. Alberta Conservation Association, Sherwood Park, Alberta. 68 pp.

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 and Game Association volunteers prepping the fence by pulling staples while the remaining crew members follow behind using a measuring stick to respace the wires and a power stapler to secure them, with the bottom smooth wire at 46 centimeters (roughly knee height) above the ground and remaining strands spaced evenly while leaving a 30 centimetre gap between the top two wires. Photo: Amanda MacDonald



Alberta Fish and Game Association volunteers prepping existing barbed wire strands to be respaced by pulling fencing staples. Photo: Amanda MacDonald



Completed section of modified fence with the bottom strand of barbed wire removed and replaced with smooth wire secured at 46 centimetre (roughly knee height) above ground and remaining strands of barbed wire respaced evenly while leaving a 30 centimetre gap between the top two wires. Photo: Amanda MacDonald