

Alberta Conservation Association 2019/20 Project Summary Report

Project Name: Pronghorn Fence Crossing Enhancement

Wildlife Program Manager: Doug Manzer

Project Leader: Mike Verhage

Primary ACA staff on project: Jeff Forsyth, Tyler Johns, Paul Jones, Amanda MacDonald, Natalie Pittman, Scott Vegter, and Mike Verhage

Partnerships

Alberta Environment and Parks
Alberta Fish & Game Association

Key Findings

- In 2019 Alberta Conservation Association (ACA) completed four projects in partnership with Alberta Fish & Game Association (AFGA) where we modified 47 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.
- A 2.5 km fence line composed of page wire and barbed wire was removed from one property in 2019.
- Since the initial year of the project approximately 426 km of fencing has been enhanced and an additional 34.5 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, 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 deer by

reducing barriers to seasonal movements 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 2019, 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 re-spaced 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 (Burkholder et al. 2018; Jones et al. 2020).

Results

We completed four fencing projects on six properties with AFGA in 2019, where we modified 47 km of barbed-wire fence by replacing the bottom strand with double-stranded smooth wire and adjusting its height to 46 cm (Figure 1). Additionally, we removed 2.5 km of page wire. This is the third largest distance modified in one summer since the implementation of the project in 2009. Projects were completed within the Milk River basin and South Saskatchewan River basin, including the South Saskatchewan River sub-basin and the Red Deer River sub-basin, allowing for fine-scale barrier reduction over the large geographic range which pronghorn utilize as migration corridors.

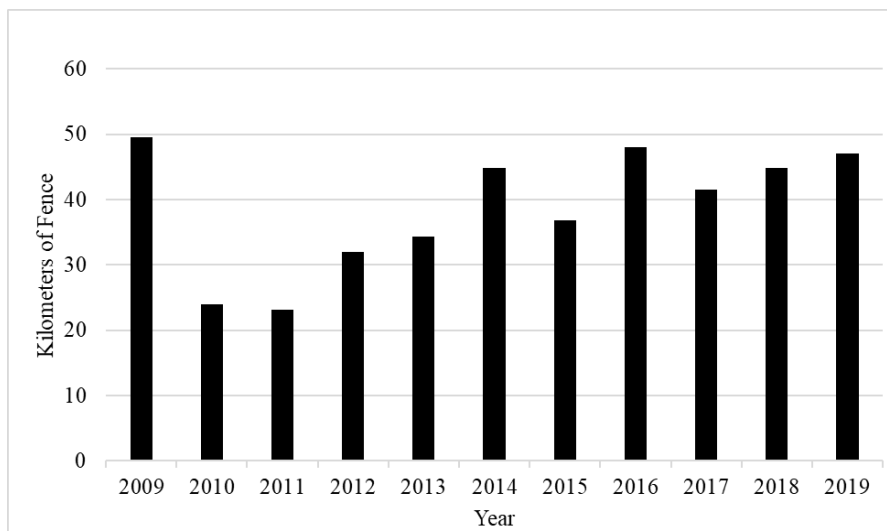


Figure 1. Km of wildlife-friendly fence completed per year by AFGA and ACA.

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

Literature Cited

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Photos



ACA staff member, Mike Verhage, and AFGA volunteer use a measuring stick to space wires at recommended distances as a power stapler is used to secure the wires, with the bottom smooth wire at 46 cm (roughly knee height) above ground. Photo: Amanda MacDonald



ACA staff member, Scott Vegter, preparing existing barbed wire strands to be re-spaced by pulling fencing staples while volunteers use a power stapler to secure the wires, with the bottom smooth wire at 46 cm (roughly knee height) above the ground and remaining strands secured at equal intervals. Photo: Amanda MacDonald



Completed section of modified fence with the bottom strand of barbed wire removed and replaced with smooth wire secured at 46 cm (roughly knee height) above ground and remaining strands of barbed wire re-spaced to equal intervals. Photo: Amanda MacDonald