Alberta Conservation Association
2017/18 Project Summary Report

Project Name: Pronghorn Fence Crossing Enhancement

Wildlife Program Manager: Doug Manzer

Project Leader: Mike Verhage

Primary ACA staff on project: Jennifer Baker, Aiden Bateman, Jeff Forsyth, Paul Jones, Allie Olson, and Mike Verhage

Partnerships

Alberta Environment and Parks
Alberta Fish & Game Association
National Fish and Wildlife Foundation

Key Findings

- In 2017/18, Alberta Conservation Association (ACA) completed two projects in partnership with Alberta Fish & Game Association (AFGA) where we modified 26 kilometre of barbed-wire fence by replacing the bottom strand with double-stranded smooth wire and adjusted its height to 46 centimetre off the ground.
- In addition to enhancing fences to make them "wildlife-friendly," we also removed one kilometre of page wire; a type of fence that poses a significant barrier to pronghorn movement.
- Due to the extreme dry conditions and associated fire hazard in 2017/18, we completed fewer projects and had less personnel than previous years.

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 takes a lot of effort.

To help alleviate this problem, Alberta Fish and Game Association (AFGA) initiated a project in 2009, which Alberta Conservation Association (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 2017, 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 centimetres. 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 2017/18, where we modified 26 kilometres of barbed-wire fence by replacing the bottom strand with double-stranded smooth wire and adjusting its height to 46 centimetres. The number of projects completed 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 without the on-the-ground assistance from ACA that included modifying 16 kilometres of fence. In total, 42 kilometres of wildlife-friendly fencing was completed (Figure 1).

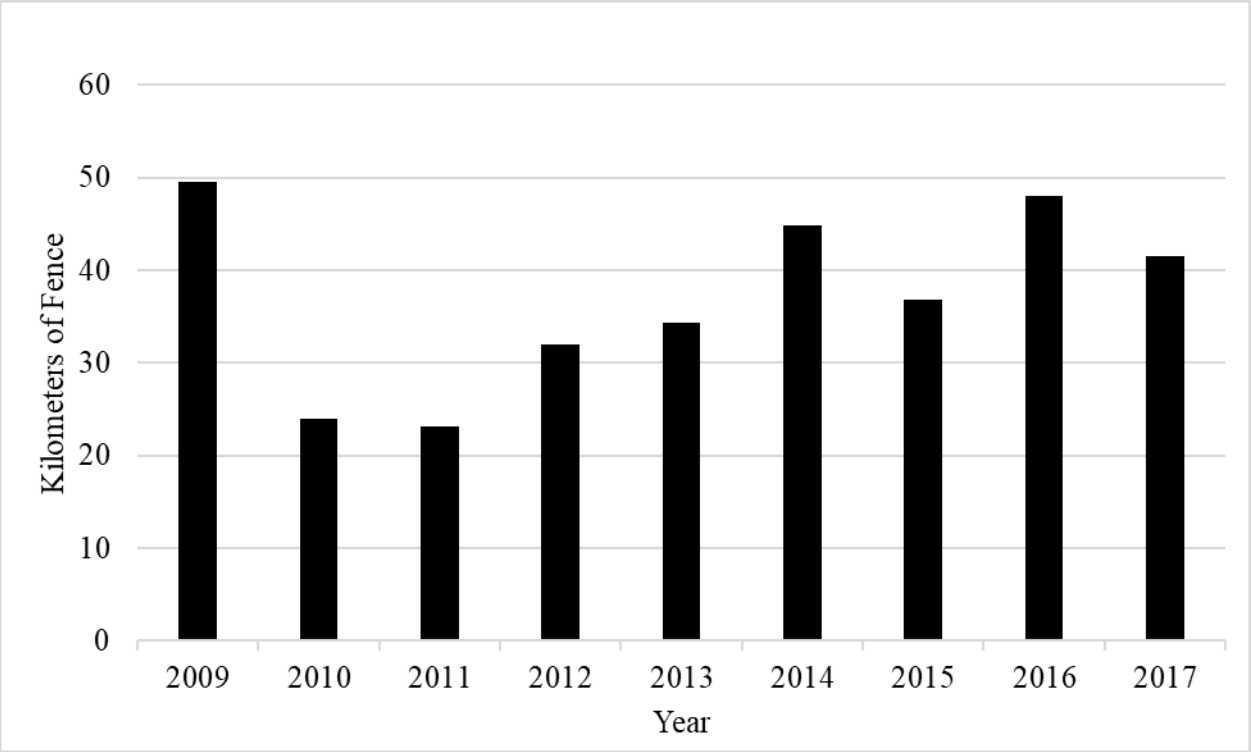

Figure 1. Kilometres of wildlife-friendly fence completed per year by Alberta Fish & Game Association and Alberta Conservation Association.

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
Martin Sharren – Alberta Fish & Game Association

Literature Cited

Gates, C.C., P. Jones, M. Suitor, 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 processed? Springer-US, New York, New York USA.

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Photos

Alberta Conservation Association staff member Jennifer Baker and a volunteer secure the bottom smooth wire at 46 centimetres above ground with a power stapler. Photo: Mike Verhage

An image of a barbed-wire fence where the bottom strand has been replaced with double-stranded smooth wire and its height adjusted to 46 centimetres. Photo: Robert Anderson

An image from a trail camera shows severe scarring on the neck and back of a pronghorn female resulting from repetitive crossings under barbed-wire fences. Photo: Alberta Conservation Association


Alberta Conservation Association staff member Paul Jones ensures that the bottom wire is secured at 46 centimetre (roughly knee height) above ground. Photo: Robert Anderson