

**Alberta Conservation Association**  
**2022/23 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, Paul Jones, Amanda MacDonald, Dayce Rhodes, Phil Rose, and Sarah Vriend

**Partnerships**

Alberta Environment and Protected Areas

Alberta Fish & Game Association

**Key Findings**

- We completed three fencing projects in partnership with Alberta Fish & Game Association in 2022 where we modified 39 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.
- Since the initial year of the project 615 km of fencing has been enhanced and an additional 34.5 km of page wire has been completely removed.

**Abstract**

A simple and effective method to mitigate the negative impact fences have on pronghorn is to implement wildlife-friendlier fencing techniques. For pre-existing fences, the retrofitting of wires to wildlife-friendlier standards is time consuming and costly. In 2022, we were able to alleviate these burdens on landholders interested in improving fence permeability for pronghorn by replacing the bottom barbed wire of 39 km of fenceline with double-stranded smooth wire raised to 46 cm. Retrofitting was completed by volunteers with the Alberta Fish & Game Association. In total, the Pronghorn Fence Crossing Enhancement Project facilitated the establishment of

nearly 615 km of wildlife-friendlier fencing throughout the pronghorn migration corridor of southeastern Alberta.

## **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 fencelines 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 labour intensive.

To help alleviate the financial burden and workload of retrofitting fences, Alberta Fish & Game Association (AFGA) initiated the Pronghorn Fence Crossing Enhancement Project in 2009.

Alberta Conservation Association (ACA) assists with identifying important pronghorn movement zones, landowner introductions, and conducting field activities. The project works with private landowners in southeastern Alberta to actively convert existing barbed wire fences to wildlife-friendlier fences. On a case-by-case basis, funding may be provided to landowners going toward the purchase of supplies for 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 the ongoing COVID-19 pandemic, methodology for the project was altered from previous years and matched the protocol followed in 2020 and 2021.

A COVID-19 safety protocol was developed in 2020 and continued to be implemented throughout 2022 to ensure the fencing events could be conducted in a safe and responsible manner. Fencing events were held in July, September, and December, and due to the ongoing COVID-19 pandemic, we evaluated fencing events 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, we set dates for the events with the understanding they could be cancelled with changing provincial health recommendations. We identified candidate fencelines on maps to be modified for each participating landowner; this information was used to help plan fence modification weekends and coordinate volunteers. Due to dry weather conditions, the fire hazard in 2022 was high and impacted the ability to implement the project to the extent seen in previous years.

In the field, small crews replaced the bottom strand of barbed wire with double-stranded smooth wire and adjusted the height of the bottom wire to 46 cm (Paige 2020). We also respaced the remaining strands of barbed wire to ensure the fence remains functional for livestock. When approved by the landowner, we left a gap of 30 cm between the top two wires to prevent entanglement by other ungulates crossing over the fence (Paige 2020). These alterations enable 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, Jones et al. 2020).

## **Results**

We completed four fencing projects with AFGA in 2022, where we modified 39 km of barbed wire fence by replacing the bottom strand with double-stranded smooth wire and adjusting its height to 46 cm (Figure 1). To adhere to our ongoing COVID-19 safety protocol, we allowed fewer volunteers to participate in the fencing weekend events. Additionally, the dry weather conditions throughout the summer of 2022 resulted in a high fire hazard throughout the prairie region. The fire hazard impacted the number of volunteers we allowed on site and distance of fence we were able to modify. Fencing events in July and October were also postponed due to fire hazard. To compensate for cancelled events in the summer, a project was moved to December where volunteers were able to modify an additional 9.6 km of fenceline. Due to the

challenges faced throughout the field season, we modified a below average distance of fenceline (avg. = 44 km). All projects were completed within the Milk River watershed, allowing for fine-scale barrier reduction over the large geographic range, which pronghorn use as migration corridors.

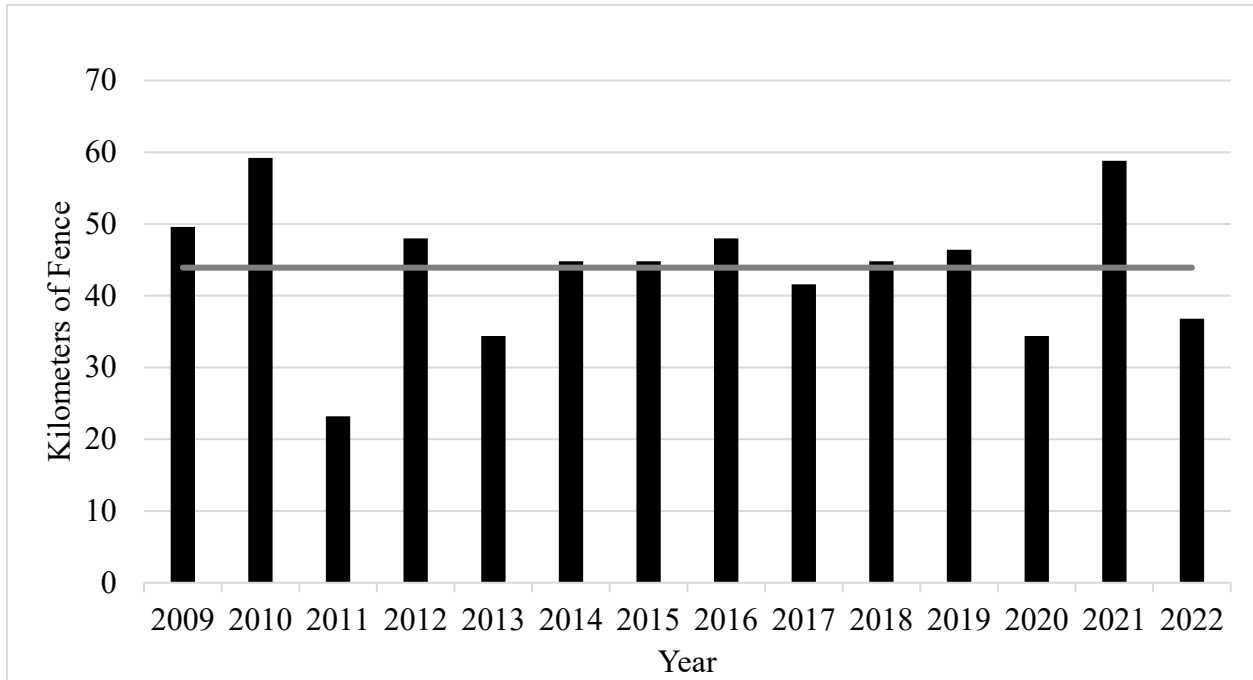


Figure 1. Number of kilometres of wildlife-friendlier fence completed per year by AFGA and ACA with the average of kilometres modified to date (n = 44 km).

## 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 and 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 – AFGA
- Kelly Carter – AFGA

### **Literature Cited**

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## Photos

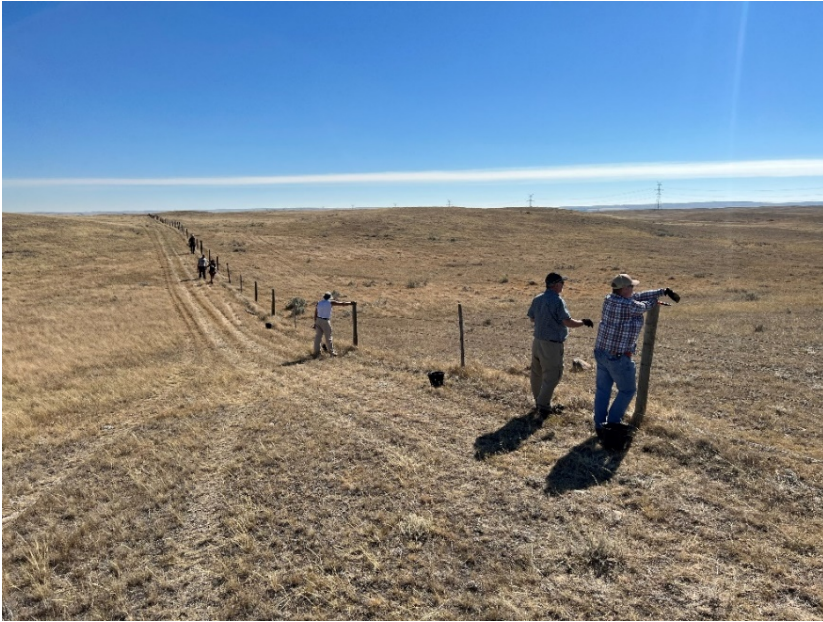


Photo 1. AFGA volunteers taking a break from pulling fencing staples while waiting for the remainder of the group who are respacing the wires and securing them with a power stapler, with the bottom smooth wire set at 46 cm (roughly knee height) above the ground and remaining strands spaced evenly to 107 cm. Photo: Amanda MacDonald



Photo 2. AFGA volunteers working through snow drifts to respace wires with the bottom smooth wire set at 46 cm (roughly knee height) above the ground and remaining strands spaced evenly to 107 cm. Photo: Amanda MacDonald



Photo 3. Modified bottom strand of double-stranded smooth wire secured at 46 cm (roughly knee height) above ground with native pronghorn forage silver sagebrush (*Artemisia cana*) and blue grama grass (*Bouteloua gracilis*) visible in the background. Photo: Amanda MacDonald